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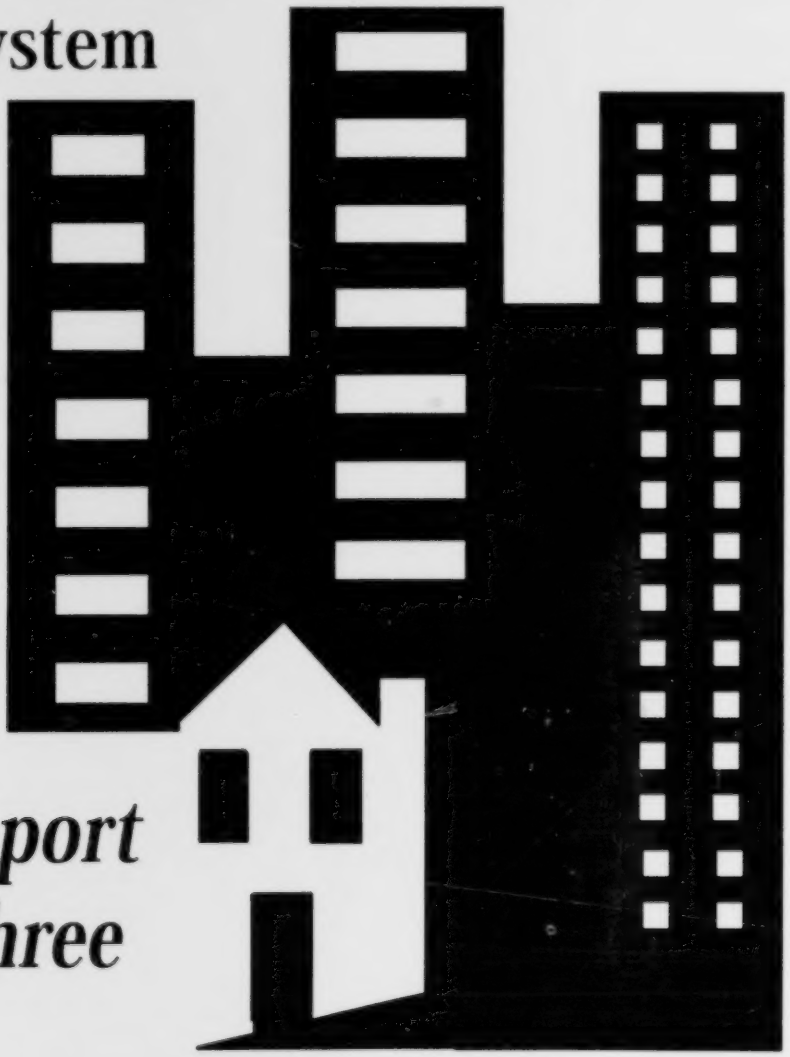
Exploring the Link Between Work-Life Conflict and Demands on Canada's Health Care System



Report Three

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Report Three: Exploring the Link Between Work-Life Conflit and Demands on Canada's Health Care System was prepared by **Dr. Chris Higgins**, Professor, Richard Ivey School of Business, University of Western Ontario, **Dr. Linda Duxbury**, Professor, Sprott School of Business, Carleton University and **Karen Johnson**, PhD Candidate, Sprott School of Business, Carleton University, for the Healthy Communities Division, Public Health Agency of Canada. The opinions expressed in this report are those of the authors and do not necessarily reflect the views of Health Canada.

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Report Three:

Exploring the Link Between Work–Life Conflict and Demands on Canada's Health Care System

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Foreword

The issues associated with balancing work and family are of paramount importance to individuals, the organizations that employ them, the families that care for them, the unions that represent them and governments concerned with global competitiveness, citizen well-being and national health. Although much has been written about the topic, only a handful of "high-impact" studies have been conducted on this subject in Canada.[1] Despite the popular press fixation on the topic (reflecting reader interest) there is, at this time, little sound empirical data available to inform the debate. This is unfortunate as credible research in this area has the power to change how governments and employers think about the issue and how they formulate and implement human resource, social and labour policy.

A decade ago we, along with our colleagues Dr. Catherine Lee at the University of Ottawa and Dr. Shirley Mills at Carleton University, conducted a national study of work–life conflict in Canada to "explore how the changing relationship between family and work affects organizations, families and employers."[2] In total, 14,549 employees from 37 medium and large private sector employment organizations and 5,921 employees from 7 federal public sector departments participated in this research.

A lot has happened in the 10 years since we conducted our first study on work–life balance. Academic research on the topic has burgeoned. Our personal understanding of the dynamics between work and family domains has also broadened as we have undertaken research with a number of companies in both the public and private sector.

Nationally, the 1990s was a decade of turbulence for working Canadians as companies downsized, rightsized, restructured and globalized. The recession of the early 1990s was followed by the "jobless recovery" of the mid-1990s, and job security was the issue that absorbed many working Canadians and their families. Organizations, faced with a glut of competent employees from which to choose, often paid little attention to becoming "best practice" with respect to human resource management. Paradoxically, as we enter the new millennium there has been a complete about-face with respect to this issue as employers, faced with impending labour shortages, have become preoccupied with recruiting and retaining "knowledge workers."[3] Such employers have recognized that a focus on "human capital" is one key to increased productivity in the new millennium.

Throughout the 1990s, technological change and the need to be globally competitive increased the pressures on organizations and employees alike. Time in employment increased for many, as did the use of non-standard types of employment. Non-work demands also increased over the decade as family structures continued to change and the percentage of working Canadians with child care, elder care or both (the sandwich generation) continued to rise.

Taken together, these changes suggest it is time for another rigorous empirical look at the issue of work–life conflict.[4] The research outlined in this report and others in the series was designed to provide business and labour leaders, policy makers and academics with an objective "big picture" view on what has happened in this area in Canada in the last decade and what the current situation is. As such, it will allow interested parties to separate the rhetoric from the reality with respect to work–life conflict.

The research study was undertaken with the following objectives in mind:

1. Quantify the issues associated with balancing work and life in the year 2001 and compare the situation today to that of 10 years earlier.

1 See for example MacBride-King & Paris, 1989; Duxbury et al., 1991; Higgins et al., 1992; Duxbury & Higgins, 1998; Duxbury et al., 1999; MacBride-King & Bachmann, 1999.

2 Duxbury et al., 1991, p. 16.

3 Peter Drucker (1999) coined the term "knowledge worker" to describe highly skilled employees whose work is complex, cyclical in nature, and involves processing and using information to make decisions.

4 From the 1970s through to the early 1990s, researchers studied work–family conflict. In the latter part of the 1990s, the term was changed to "work–life" conflict in recognition of the fact that employees' non-work responsibilities can take many forms, including volunteer pursuits and education, as well as the care of children or elderly dependents.

2. Quantify the benefits (to employees, employers, families and Canadian society) of work–life balance.[5]

3. Quantify the costs (to employees, employers, families and Canadian society) of work–life conflict.

4. Quantify the costs to the Canadian health care system of high levels of work–life conflict.

5. Help employees make the business case for change in this area in their organization.

6. Identify organizational best practices in terms of dealing with work and life issues.

7. Help organizations identify what they need to do to reduce work–life conflict in their organizations.

8. Help employees and families identify what they can do to reduce work–life conflict in their lives.

9. Empirically examine how public, private and not-for-profit (NFP) sector organizations differ from each other with respect to the work and lifestyle issues identified above.

In other words, this research examines the issues associated with work–life conflict, identifies who is at risk, articulates why key stakeholders (e.g. governments, employers, unions) should care and provides direction on ways to move forward. This research should:

- provide a clearer picture of the extent to which work–life conflict is affecting employees and employers in Canada,
- help organizations appreciate why they need to change how they manage their employees by linking conflict between work and life to the organization's "bottom line,"
- expand the overall knowledge base in this area, and
- suggest appropriate strategies that different types of organizations can implement to help their employees cope with multiple roles and responsibilities.

Theoretical Framework

There is a vast academic literature dealing with the issue of work–life conflict. A complete review of this literature is beyond the purview of this series of reports and counter to our primary objective, which is to get easily understood and relevant information on work–life conflict to key stakeholders (governments, policy makers, employees, employers, unions). That being said, readers who are interested in the theoretical underpinnings of this research are referred to Figure 1. This theoretical framework incorporates both fundamental concepts from the research literature and the key insights we have gained from our 10 years of research in this area. This research is based on the premise that an individual's ability to balance work and life will be associated with both work and non-work demands (e.g. time in and responsibility for various work and non-work roles), as well as a number of key demographic characteristics (e.g. gender, job type, socio-economic status, area of residence, sector of employment). Further, it is hypothesized that an employee's ability to balance work and life demands will be associated with outcomes in the following areas:

- organizational (commitment, intent to turnover, absenteeism, job satisfaction, job stress, rating of the organization as a place to work);
- family (family life satisfaction, parental satisfaction, family adaptation, family integration, positive parenting);
- employee (perceived stress, depressed mood, perceived physical health, burnout, life satisfaction); and
- societal (use of the health care system).

Finally, it is postulated that the link between work–life conflict and these outcomes will be moderated by factors associated with both the organization in which the employee works (e.g. work arrangements used, perceived flexibility, work environment, management support, supports and services offered by the organization, ability to refuse overtime), as well as personal strategies that the employee and the employee's family use to cope (e.g. work different hours from spouse, delay having children, have a smaller family, the use of various family-based and individual coping strategies).

5 We sometimes use the term work–life balance in this report to mean the opposite of work–life conflict. This reflects the fact that the concept of conflict and balance are frequently viewed as a continuum. Employees with low work–life conflict/high work–life balance are at one end of the continuum while those with high work–life conflict/low work–life balance are at the other.

The Report Series

This report is the third in a series of six. The series has been organized around the research framework shown in Figure 1 and includes the following:

Report One:	***The 2001 National Work–Life Conflict Study*** put the series into context by describing the sample of employees who participated in the research and examining the various "risk factors" associated with work–life conflict.
Report Two:	***Work–Life Conflict in Canada in the New Millennium: A Status Report*** made the business case for change by looking at how high levels of role overload, work to family interference, family to work interference, caregiver strain and work to family spillover) affect employers, employees and their families.
Report Three:	***Exploring the Link Between Work–Life Conflict and Demands on Canada's Health Care System*** focuses on how work–life conflict affects Canada's health care system (i.e. quantifies the system demands associated with high work–life conflict and attempts to put some kind of dollar value on how much it costs Canada to treat the health consequences of such conflict).
Report Four:	***Who Is at Risk? Predictors of High Work–Life Conflict*** will address who is at risk with respect to high levels of work–life conflict.
Report Five:	***Reducing Work–Life Conflict: What Works? What Doesn't?*** will examine what employers, employees and their families can do to reduce work–life conflict.
Report Six:	***Work–Life Conflict in Canada in the New Millennium: Key Findings and Recommendations from the 2001 National Work–Life Conflict Study*** will provide a summary of the key findings and recommendations from this research study.

It is hoped that the production of six specialized reports rather than one massive tome will make it easier for the reader to assimilate key findings from this rich and comprehensive research initiative. Each report will be written so that it can be read on its own. Each will begin with an introduction which includes the specific research questions to be answered in the report, a summary of relevant background information and an outline of how the report is organized. This will be followed by a brief outline of the research methodology employed. Key terms will be defined and relevant data presented and analyzed in the main body of the report. Where possible, national data will be referenced to allow the reader to put the findings from this research into context. Each report will end with a conclusion and recommendations chapter that will summarize the findings, outline the policy implications and offer recommendations.

Organization of Report Three

Report Three is broken down into eight main chapters.

Chapter One includes an introduction in which key terms are defined and research objectives delineated.

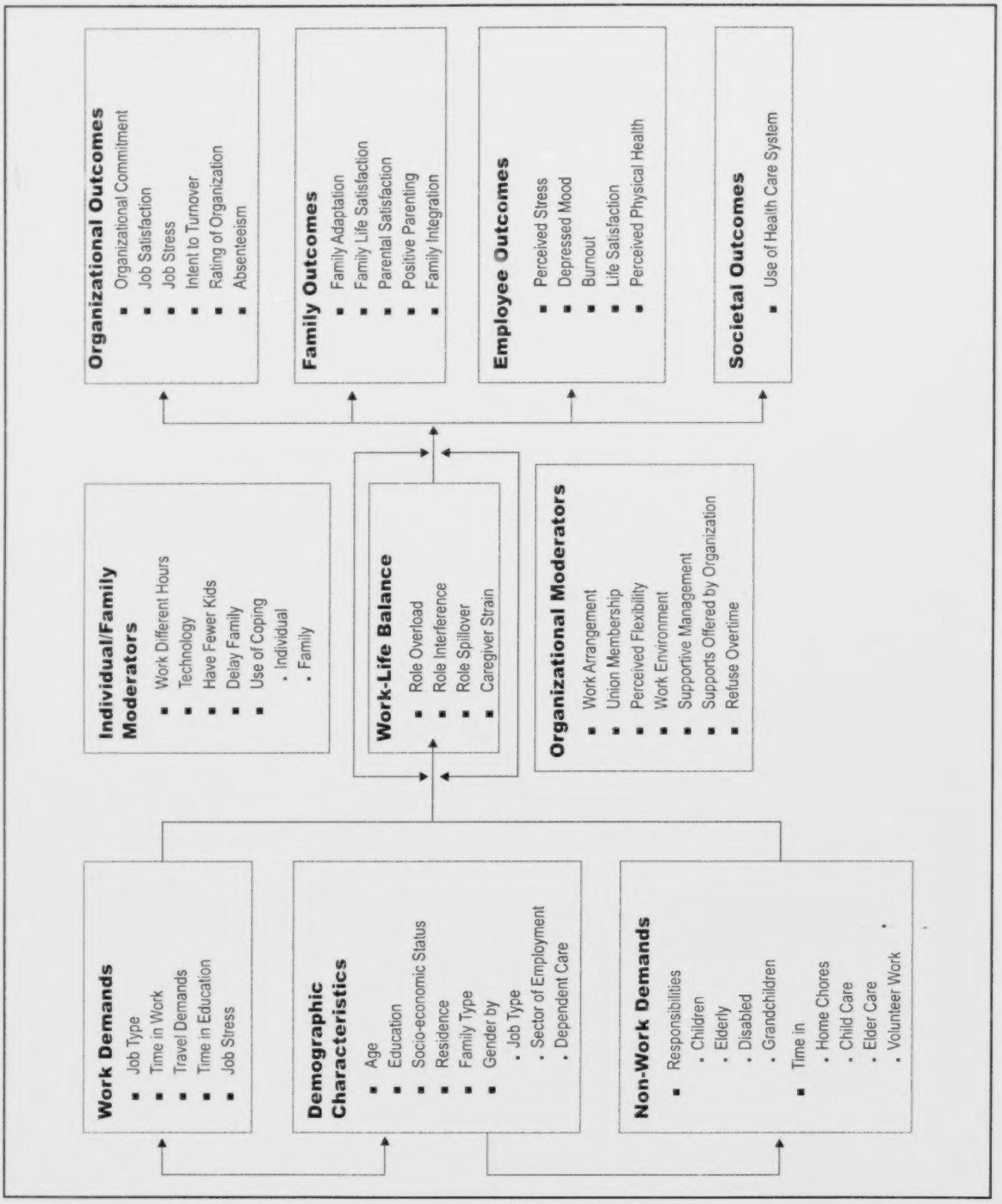
Background information on Canada's health care system is provided in Chapter Two.

Details on the methodology used in the study are covered in Chapter Three. Included in this chapter is information on the sample, the measurement of use of the health care system and perceived health, the data analysis undertaken in this phase of the research, and the reporting protocols followed.

Chapter Four examines how Canadians view their health. Included in this chapter are answers to the following questions: How do Canadian employees see their health? What is the impact of gender, job type, sector of employment and dependent care status on perceptions of health? What is the link between work–life conflict and perceived health?

Chapter Five explores the link between work–life conflict and the use of Canada's health care system. The chapter starts by presenting benchmark data on how often in the last six months Canadian employees have sought care

Figure 1: Theoretical Framework



from a physician, sought care from other health care professionals (e.g. physiotherapist), sought care from mental health professionals, stayed overnight in the hospital (i.e. inpatient care), visited a hospital emergency department, and visited a hospital or clinic for treatment or tests (i.e. outpatient care). Data are then presented to answer the following two questions: What impact do gender, job type, dependent care status and sector of employment have on the use of different components of the health care system? What is the link between work–life conflict and use of various components of the health care system?

Chapter Six addresses how much health care costs could be reduced if Canadian employees were more able to balance work and life with respect to three sets of costs: physician visits, visits to a hospital emergency department and overnight hospital stays (i.e. inpatient care).

The link between prescription drug use and work–life conflict is drawn in Chapter Seven. Data are presented to address the following issues: How much money do Canadian employees spend on prescription drugs? What impact do gender, job type, dependent care status and sector of employment have on the amount spent on prescription medicine? What is the link between work–life conflict and the amount spent on prescription medicine?

Conclusions, policy implications and recommendations are presented in Chapter Eight.

Executive Summary

There is a significant economic burden associated with keeping Canadians healthy. The health care sector is a large, resource-intensive industry employing more than 1.5 million Canadians. Canada spends more on health care in relation to the size of its economy (an estimated $122 billion in 2002: an average of $3,572 per Canadian) than every country in the world except the United States, France and Germany. In 2000, health care spending in Canada accounted for 32% of total government expenditures (including debt charges).

Annual increases in health care costs have been the norm in Canada. Between 1997 and 2002, total health spending in Canada grew by almost $34 billion (an unprecedented rate of increase). It is currently at an all-time high, even after taking into account inflation and population growth. Overall, government spending on health care has increased significantly over the past several years, but the number of supported services has dropped.

The fastest growing component of health care expenditures, drug costs, have grown at an average rate of more than 11% over the past five years. In 1993, prescription and non-prescription medications were estimated to cost $9.884 billion and to account for 6.3% of the total economic burden of illness in Canada (Statistics Canada, 1999). This had risen to approximately $15.5 billion per year by 2001.

In Canada, many groups share the costs of health care. In 2001, about three quarters (73%) of total expenditures (i.e. approximately $2,400 per person) were provided by public sector sources (i.e. federal, provincial/territorial and municipal governments). The rest came from private sector sources (e.g. insurance) and individuals (e.g. out-of-pocket expenses). Government cutbacks and federal fiscal tightening have increased the need for the private sector to assume many of these costs through benefits programs. One of the main consequences of this set of strategies has been the growth of private health care expenditures from 25.5% of all health care funding in 1991 to 29.8% of spending in 1997. Individual Canadians pay for health care both directly (e.g. health insurance premiums and out-of-pocket health care expenses) and indirectly (i.e. the taxes Canadians pay contribute to public spending on health care).

The basic objective of this report is to increase awareness, at both the public policy and organizational level, that pressures on Canada's health care system could be reduced by focusing on workplace health issues. Specifically, this report uses hard data to draw the link between work–life conflict, health status and the use of Canada's health care system. It is hoped that the data contained in this report will motivate health care providers and institutions, governments and employers to work together to address workplace health and work–life issues of Canadians. Such a focus, we contend, will help reduce burdens on Canada's health care system.

This report uses data collected for part of the 2001 "National Study on Balancing Work, Family and Lifestyle" to answer the following questions:

1. How healthy are Canadian employees?
2. How much use do Canadian employees make of the health care system?
3. How much do Canadian employees spend on prescription medicine?
4. What impact do gender, job type, sector of employment and dependent care status have on perceived health? The use of Canada's health care system? The amount employees spend on prescription medicine?
5. How does work–life conflict (operationalized to include role overload, work to family interference, family to work interference and caregiver strain) affect perceived health? The use of Canada's health care system? The amount employees spend on prescription medicine?
6. What impact does high work–life conflict have on health care costs in Canada?

Key findings are summarized below.

Demographic Profile of Respondents

The sample consists of 31,571 Canadian employees who work for medium to large (i.e. 500 or more employees) organizations in three sectors of the economy: public (federal, provincial/territorial and municipal governments), private and not-for-profit (defined in this study to include organizations in the health care and educational sectors). In total, 100 companies participated in the study: 40 from the private sector, 22 from the public sector and 38 from the not-for-profit (NFP) sector. The sample is distributed as follows:

- 46% of the respondents work in the public sector, 33% work in the NFP sector, 21% are employed by a private sector company;
- 55% of the respondents are women;
- 46% of the respondents work in managerial and professional positions while 54% work in "other" positions (e.g. clerical, administrative, retail, production, technical); and
- Just over half (56%) of the respondents have dependent care responsibilities (i.e. spend an hour or more a week in child care, elder care or both).

The 2001 survey sample is well distributed with respect to age, region, community size, job type, education, personal income, family income and family's financial well-being. The mean age of the respondents is 42.8 years. Approximately half of the respondents are highly educated male and female knowledge workers (e.g. managers and professionals). One in three is a clerical or administrative employee; one in five holds a technical or production position. The majority of respondents are married or living with a partner (75%) and are part of a dual-income family (69%). Eleven percent are single parents. Twelve percent live in rural areas. One quarter of the respondents indicate that money is tight in their family; 29% of respondents earn less than $40,000 per year. One in three of the respondents has a high school education or less.

The majority of respondents have responsibilities outside of work. Seventy percent are parents (average number of children for parents in the sample is 2.1); 60% have elder care responsibilities (average number of elderly dependents is 2.3); 13% have responsibility for the care of a disabled relative; 13% have both child care and elder care demands (i.e. are part of the "sandwich generation"). The fact that the demographic characteristics of the sample correspond closely to national data provided by Statistics Canada suggests that the findings from this study can be generalized beyond this research.

Sample Profile: Levels of Work–Life Conflict

Role overload is having too much to do in a given amount of time. This form of work–life conflict occurs when the total demands on time and energy associated with the prescribed activities of multiple roles are too great to perform the roles adequately or comfortably. The majority of employees in our sample (58%) are currently experiencing high levels of role overload. Another 30% report moderate levels of role overload. Only 12% of the respondents in this sample report low levels of overload. Our research suggests that the proportion of the workforce experiencing high levels of role overload has increased substantially over time (i.e. by approximately 11%).

Work to family interference occurs when work demands and responsibilities make it more difficult for an employee to fulfil family role responsibilities. One in four of the Canadians in this sample report that their work responsibilities interfere with their ability to fulfil their responsibilities at home. Almost 40% of the respondents report moderate levels of interference. The proportion of the Canadian workforce with high levels of work to family interference has not changed over the past decade.

Family to work interference occurs when family demands and responsibilities make it more difficult for an employee to fulfil work role responsibilities. Only 10% of the Canadians in this sample reported high levels of family to work interference. Another third reported moderate levels of family to work interference. Our data suggest that the percentage of working Canadians who give priority to family rather than work has doubled over the past decade.

Approximately one in four of the individuals in this sample experiences what can be considered to be high levels of caregiver strain: physical, financial or mental stress that comes from looking after an elderly or disabled dependent. While the majority of the respondents to this survey (74%) rarely experience this form of work–life conflict, 26% report high levels of caregiver strain.

Who, in this sample, has more problems balancing work and family responsibilities? The evidence is quite clear—employed Canadians with dependent care responsibilities. Employees who have child and/or elder care responsibilities report higher role overload, work to family interference, family to work interference and caregiver strain than their counterparts without dependent care. The fact that employed parents and elder caregivers have greater difficulties balancing work and family is consistent with the research done in this area and can be attributed to two factors: greater non-work demands and lower levels of control over their time.

Job type is associated with all but one of the measures of work–life conflict. On the one hand, employees with higher demands at work (e.g. managers and professionals) are more likely than those in "other" jobs to experience high levels of overload and work to family interference. Those in "other" jobs, on the other hand, are more likely to report higher levels of caregiver strain due to the financial stresses associated with elder care.

Women are more likely than men to report high levels of role overload and high caregiver strain. This is consistent with the fact that the women in this sample devote more hours per week than men to non-work activities such as child care and elder care, and are more likely to have primary responsibility for non-work tasks.

How healthy are Canadian employees?

How do Canadian employees view their physical health? While just under half of the respondents to this survey (48.4%) indicate that their health was very good or excellent, almost one in five (16.7%) perceives his or her health to be fair or poor. This is a significantly lower proportion of respondents perceiving that they are in very good to excellent health (and not surprisingly a higher proportion reporting that they are in fair to poor health) than reported by Statistics Canada (1999) for Canadians aged 12 or older. While some of this difference might be explained by the age differences in the two samples (younger Canadians can be expected to enjoy better health than older Canadians), it is also likely that working conditions and job-related stress are taking their toll on Canadian employees' health status.

How much use do Canadian employees make of Canada's health care system?

Employed Canadians routinely seek medical care from their physician and other health care professionals. In the six months prior to this study:

- Just over half (54%) of the respondents sought care from their physician for reasons other than a routine check-up or maternity follow-up. These employees made an average of 5.8 physician visits per year.
- One in three (29.3%) visited a hospital or clinic on an outpatient or day-use basis for medical tests or procedures. These employees made an average of 3.8 outpatient visits per year.
- One in three (31.8%) of the respondents sought medical care from a health care professional other than a physician. These employees made an average of 10 visits per year to other health care professionals.
- Just over one in ten of the employees in the sample (13.1%) sought medical care at a hospital's emergency department for a personal health problem. These employees made an average of 3.2 visits per year to an emergency department.
- Just over one in ten (10.6%) of the respondents sought help from a mental health professional. These individuals made an average of 8.2 visits per year to a mental health professional.
- Almost six percent of the respondents required inpatient hospital care (i.e. stayed overnight in the hospital). These employees stayed in hospital for an average of 4.6 nights per year.

These data also allow us to estimate the average use that Canadians employed in larger organizations make of the different facets of Canada's health care system. Such employees make approximately:

- 3.2 visits per year to a physician,
- 3.0 visits per year to other health care professionals (e.g. physiotherapist, chiropractor),
- 1.0 outpatient visit per year to a hospital or clinic for medical tests or procedures,
- 0.9 visits per year to a mental health professional,
- 0.4 visits per year to a hospital emergency department, and
- 0.3 overnight stays per year in a hospital.

How much do Canadian employees spend on prescription medicine?

The typical Canadian who works for the country's larger employers spent approximately $164 per year on prescription medicine for personal use. While 44% of employees did not purchase any prescription drugs, one in five (19%) spent more than $300 per year on prescription medicines for their own personal use.[6] Eighty percent of the respondents noted that their employer paid for 100% of their drug costs. Virtually all of the other employees indicated that they and their employer shared the costs of prescription drugs. The high degree of correspondence between the data on prescription drug expenditures and perceived health (the one in five respondents who spent $300 or more a year on prescription medication also rated their health as fair or poor) increases our confidence in these findings.

6 The rest of the respondents (37% of the sample) spent between $1 and $300 per year on medications.

Impact of key contextual variables

This research initiative has culminated in the collection of a large, rich, comprehensive data set with which to examine perceived health and the use of Canada's health care system by employed Canadians. One of the strengths of this research is that the capacity of this large data set allows us to examine how key factors—such as the gender of the employee, the type of job he or she holds, the sector in which he or she works and the dependent care responsibilities he or she assumes—affect perceived health, spending on prescription medication and use of various facets of the health care system. Key differences are noted below.

Impact of gender

What impact does gender have on perceived health and use of the health care system? First, and perhaps most importantly, when job type and dependent care status are taken into account, there were no differences in perceived health that could be associated with gender. This is a very important finding as it runs counter to much of what has been reported in the literature (e.g. women report poorer health, albeit only at younger ages). This would suggest that it is life circumstances (e.g. being compressed into lower level jobs within organizations, lower levels of perceived control) rather than gender itself which is associated with the lower levels of perceived health often reported by women. In other words, it is the work environment and demands at work and home that contribute to gender differences in health rather than some inherent characteristic of women that makes them more vulnerable to disease and/or stress.

Despite the fact that there were no gender differences in perceived health, the women in the sample made substantively more use of Canada's health care system than the men. The data in this regard are unequivocal. Visits to a physician, other health care professionals and mental health professionals, as well as treatment on an outpatient basis and spending on prescription drugs, were all strongly associated with gender—with women making more use of these facets of the health care system and spending more on prescription drugs than men even when job type, dependent care responsibilities and sector of employment were taken into account. How can one reconcile these two facts (i.e. women make more use of the health care system even though there are no substantive gender difference in perceived health)? Three explanations are plausible:

- Women are more likely than men to seek care when they are not well (e.g. women are making appropriate use of physician services and men are not seeking treatment for illness).
- Women are more likely to see their physician for non-physical concerns (e.g. counselling).
- Women are more likely to seek treatment for "female" health issues such as menopause care, menstrual issues and breast screening than men are to seek care for "male" health issues.

Further study is needed to determine the etiology of these results.

Impact of job type

What impact does job type have on perceived health and the use of the health care system? While the conclusions one draws with respect to the link between job type and health depend very much on the measure being used, the majority of the findings from this study support the idea that managers and professionals are in better health than their counterparts in non-professional positions.

Respondents in managerial and professional positions, regardless of their gender, were more likely than their counterparts in "other" non-professional jobs, to describe their health as being very good or excellent. Respondents in "other" positions were more likely to describe their health as fair or poor. These findings are consistent with the research in the area which links lower socio-economic status with poorer physical health.

Curiously enough, given the above findings with respect to perceived health, use of the health care system is not strongly associated with job type. When gender is taken into account, job type is not associated with visits to other health care professionals, visits to mental health professionals, inpatient use of hospitals and the likelihood of seeking outpatient treatment. The results are even stronger for the male sample where there were no job-type differences in visits to a physician and the amount spent on prescription drugs.

Examination of the data on use of the emergency department helps us to reconcile these two sets of data. Job type is strongly associated with use of Canada's emergency department with those in "other" positions being more likely to seek care from an emergency department than their counterparts in managerial and professional positions. There are several possible

explanations why employees in "other" positions are more likely to use this form of health care. First, it may be that employees in this group are less likely to have a family physician and more likely to rely on emergency room physicians for medical problems and emergencies. This explanation of the data appears to apply to men in "other" positions in particular (i.e. they are more likely than their male counterparts in managerial and professional positions to say their health is fair/poor but no more likely to have visited a physician). Second, it may be that employees in "other" positions find it more difficult to get time off work to seek care from a physician and are required to go to the emergency department for care outside of regular hours. Finally, the fact that women in "other" positions are more likely than any other group of employees in this sample to say their health is fair/poor, to have visited a physician, and to have visited other health professionals suggests that, in this case, the higher number of visits to the emergency department reflects the fact that this group of women is in poorer health.

Finally, it is important to note that when gender is taken into account there is no association between job type and visits to a mental health professional. This is an important finding given the fact that many other studies have talked about the stresses associated with working in clerical and administrative positions within the organization (i.e. low-control jobs). The data from this study suggest that the disappearance in job-type differences in stress levels can be attributed to the fact that the stresses and demands associated with being a manager or a professional have increased over time while the amount of control such individuals wield has declined. There is no evidence that the converse has occurred (i.e. that the stresses associated with pink and blue collar work has diminished over time).

Impact of gender and job type

It is interesting to note that while job type is associated with physician visits and prescription drug use for the women in the sample (females in "other" positions are more likely to visit the physician and spend more money on prescription medication than female managers and professionals), no such difference was noticed for the men in the sample. There are several plausible explanations for this finding. First, it may be that managerial and professional jobs offer a health advantage to women. Alternatively, it may be that clerical and administrative jobs (e.g. pink collar jobs) have a more deleterious impact on the health of women than blue collar jobs do on the health of men. Finally, it is also possible that women in clerical and administrative positions who make the most visits to the physician have long-standing health issues which reduce their ability to advance in the organization. Further study is needed to determine the etiology of these results.

Impact of dependent care

Having dependent care responsibilities (i.e. children at home and/or elder care) is negatively associated with perceived health for both men and women. Employees without dependent care responsibilities, regardless of gender, were more likely to rate their health as very good or excellent while those with child and/or elder care responsibilities were more likely to say their health was good or fair/poor. These data suggest that combining work and family responsibilities takes its toll on the health of employed men and women. Furthermore, the fact that dependent care responsibilities (i.e. parenthood, elder care responsibilities) appear to impair the health of both men and women suggests that it is the challenges of combining work with parenting/caregiving that impair health, not being a working mother or caregiver.

What impact does having responsibility for the care of dependents have on employees' use of the health care system? Surprisingly, when gender is taken into account, dependent care status is not associated with the use of physician services, other health care professionals, inpatient visits to hospitals, outpatient visits to hospitals and the use of emergency departments. It is, however, associated with visits to mental health professionals. When gender is taken into account, employees with dependent care responsibilities were more likely than their counterparts without such responsibilities to seek care from a mental health professional. They also made more visits to these professionals. These data are very interesting as they indicate that combining work and caregiving responsibilities has a negative impact on the mental (rather than the physical) health of employees. This interpretation of the data is consistent with the fact that the employees in this sample who have dependent care responsibilities reported higher levels of stress, burnout and depressed mood than their counterparts without dependent care.

When these results are looked at through the lens of two of the most common workplace health models (Karesek and Theorell's [1990] Job Strain Model and Siegrist's [1996] High Effort/Low Reward Model), it seems appropriate to label the job of employed parent/elder caregiver as either a high-demand/low-control and/or high-effort/low-reward pursuit. This classification would allow researchers to apply the vast research literature in these areas to the field of work–life conflict.

Impact of sector of employment

Sector of employment is associated in a systematic manner with all but two of the measures of perceived health and health care system use included in the study. When gender is taken into account (e.g. males compared to males, females to females), it can be seen that public sector employees were more likely to have visited a physician than their counterparts in the private and NFP sectors. They also made more visits per year than employees in the other sectors. This finding is consistent with the fact that this group of employees was more likely to rate their health as poor. The relationships observed with respect to the use of other health care professionals, visits to a mental health professional, outpatient treatment and spending on prescription medication is also very consistent. In all cases, men working in the private sector made significantly less use of the health care system than any other group in the sample while females working in the public sector made significantly greater use. While some of the sectoral differences in health can likely be attributed to either age (private sector younger), policies within the sector (public sector employees have more generous health benefits) or socio-economic status (those in the NFP sector are highly educated and well paid), it is likely that the issue is much more complex than this. Future research in this area is needed to determine the reasons behind these sectoral differences.

The link between role overload and health[7]

What implications does high role overload have on the health of Canada's employees and the burdens placed on Canada's health care system? The findings from these data are unequivocal: employees with high levels of role overload are in poorer physical and mental health and make greater use of Canada's health care system than those with low levels of role overload. Consider the following. Compared to their counterparts with low levels of role overload, employees with high role overload are:

- 2.9 times more likely to say their health is fair/poor,
- 2.6 times more likely to have sought care from a mental health professional,
- 2.4 times more likely to have received care on an outpatient basis,
- 1.9 times more likely to have spent more than $300 per year on prescription medicine for their personal use,
- 1.8 times more likely to have made 6 or more visits per year to a physician,
- 1.6 times more likely to have made 8 or more visits per year to another health care professional,
- 1.5 times more likely to have required inpatient hospital care, and
- 1.4 times more likely to have visited a hospital emergency room.

What do these data mean in terms of the health care system? Higher work–life conflict is associated with increased health care costs. For example, we calculated the direct cost of:

- physician visits due to high role overload to be approximately $1.8 billion per year,
- inpatient hospital stays due to high role overload to be approximately $3.8 billion per year, and
- visits to the hospital emergency department due to high role overload to be approximately one quarter of a billion dollars per year.

These data also indicate that employers who overwork their employees (i.e. place a high reliance on unpaid overtime) will pay a price in terms of increased benefit expenditures. Companies that focus on reducing role overload should reap a number of benefits to their bottom line, including reduced absenteeism (see Duxbury & Higgins [2003]) and lower benefit costs.

The link between work to family interference and health

What implications does high work to family interference have on the health of Canada's employees and the burdens placed on Canada's health care system? From the analysis presented in this report, we conclude that employees with high levels of work to family interference are in poorer physical and mental health and make greater use of Canada's health care system than those with low levels of work to family interference. Compared to their counterparts with low levels of work to family interference, employees with high levels of interference are:

- 2.4 times more likely to say their health is fair/poor,
- 1.7 times more likely to have sought care from a mental health professional,
- 1.7 times more likely to have received care on an outpatient basis,
- 1.6 times more likely to have made 6 or more visits per year to a physician,

7 A discussion of the assumptions made when calculating the costs associated with high levels of work–life conflict can be found in Appendix E.

- 1.5 times more likely to have visited a hospital emergency room,
- 1.4 times more likely to have required inpatient hospital care, and
- 1.3 times more likely to have spent more than $300 in the past year on prescription medicine for their personal use.

Not surprisingly, given the above data, higher levels of this form of work–life conflict are also associated with increased health care costs. For example, we calculated the direct health costs of high levels of work to family interference to be approximately $2.8 billion per year (two thirds of a billion dollars per year in physician visits, $2 billion per year in inpatient hospital stays and just over $100 million per year in visits to the hospital emergency department).

The link between family to work interference and health

This form of work–life conflict is not as strongly associated with perceived health and use of the health care system as the other forms of work–life conflict examined in this study. While family to work interference is negatively associated with perceived health (employees with high family to work interference are almost twice as likely to say their health is fair/poor than employees with low family to work interference), and positively associated with use of Canada's health care system and prescription drug use, the magnitude of these relationships are (with one exception) lower than can be observed with the other three forms of work–life conflict. The extent to which this form of work–life conflict increases health costs and demands is also lower than can be observed with respect to role overload and caregiver strain. These data would suggest that Canadian society will benefit (though employers may not) if more Canadians place a higher priority on family than on work.

That being said, the data indicate that there are health consequences associated with giving family roles a higher priority than work roles—poorer mental health. Employees with high family to work interference are almost twice as likely to seek care from mental health professionals than their counterparts with low levels of this form of interference. What causes the increased incidence of mental health problems in this group (e.g. increased stress and depression) is hard to determine from the cross-sectional data collected for this analysis. Future research should seek to determine the direction of causality with respect to these findings (i.e. does putting family first cause increased stress or does an individual who is suffering from poorer mental health place an increased importance on his or her family?).

The link between caregiver strain and health

This form of strain appears to be more closely linked to physical health problems and less strongly associated with mental health concerns than the other three forms of work–life conflict. Employees with high levels of caregiver strain make the greatest use of physician services and are the most likely to have spent time in hospital on both an inpatient and an outpatient basis. They also make the highest use of the emergency room and spend the greatest amount on prescription medication. Compared to their counterparts with low levels of caregiver strain, employees with high levels of caregiver strain are:

- 1.8 times more likely to have received care on an outpatient basis,
- 1.7 times more likely to say their health is fair/poor,
- 1.6 times more likely to have spent $300 in the last year for prescription medicine for their personal use,
- 1.5 times more likely to have sought care from a mental health professional,
- 1.5 times more likely to have required inpatient hospital care,
- 1.5 times more likely to have visited a hospital emergency room, and
- 1.4 times more likely to have made 6 or more visits per year to a physician.

It would appear from these data that caregiver strain is associated with an increased incidence of illness that requires treatment and prescription drugs.

Data on caregiver strain provide further support for our conclusion that work–life conflict is associated with increased health care demands and costs. For example, we calculated the direct costs of inpatient hospital stays due to high caregiver strain to be approximately $4 billion per year, of physician visits due to high caregiver strain to be over $500 million per year and of visits to a hospital emergency department due to high caregiver strain to be over $100 million per year.

These data also point to a significant costs savings for employers who address the issues associated with elder care. Companies could save about $128 per employee per year in prescription costs alone if they could reduce caregiver strain.

Conclusions and Recommendations

In this report, we established that:

- Work–life conflict in its various forms is a problem for many Canadian employees.
- High work–life conflict is associated with lower levels of perceived health for working Canadians, regardless of how we conceptualize work–life conflict.
- High levels of work–life conflict have a negative impact on employers' bottom line and increase demands on Canada's health care system.
- The health care-related costs of high work–life conflict are staggering—approximately $6 billion a year attributable to high role overload, $5 billion a year to high caregiver strain, $2.8 billion to high work to family interference and half a billion dollars for high family to work interference.[8]
- Two forms of work–life conflict are particularly costly (both in terms of increased demands on the health care system, and increased health care and benefits costs): high role overload and high caregiver strain.

Role overload appears to be the greatest culprit: we estimate that physician visits would be 25% lower, inpatient hospital stays would be reduced by 17% and use of Canada's emergency rooms would be cut by 23% if high levels of this form of work–life conflict could be eliminated. These findings suggest that the downsizing strategies implemented by many employers throughout the 1980s and 1990s and the concomitant increase in employee workloads (see Higgins and Duxbury, 2002) have backfired and the savings in payroll (i.e. salary and benefit dollars) realized by corporations and public sector employers through downsizing may be offset by substantial increases in costs to the health care system. It would appear that work–life conflict is not only a moral issue—it is a productivity and economic issue, a workplace issue and a social issue, and needs to be addressed as such.

Caregiver strain is also problematic. Analysis of our data suggests that physician visits could be reduced by 8%, inpatient hospital stays lowered by 18% and use of Canada's emergency rooms cut by 14% if high levels of this form of work–life conflict could be eliminated. These findings suggest that the aging of the Canadian workforce and the greater need to provide elder care is overwhelming employees' ability to cope with both work and life demands. The lack of social and governmental support for elder care, as well as inflexible work schedules, mean that employees with elder care commitments often have no choice but to miss work and/or take an unpaid leave of absence. If nothing is done to alleviate the demands placed on these workers, ill health due to this form of work–life conflict is likely to increase dramatically in the next decade as more baby boomers assume responsibility for the care of their parents. These findings indicate that if business does not take strategic action with respect to this issue soon (e.g. implement family-friendly work arrangements and benefits), the government should step in and take action to help employees deal with elder care issues. The country cannot afford to pay the health care costs incurred by organizational inaction in this area.

How can Canada afford *not* to address the issue of work–life conflict?

These numbers offer a wake-up call to employers and governments for a number of reasons. First, they suggest that a substantive proportion of their workforce (almost one in five) is more likely to engage in behaviours (e.g. purchase prescription medicine, be absent from work) that can negatively impact the bottom line. This may affect Canada's ability to compete globally. Second, they indicate that combining work and family responsibilities takes its toll on the health of employed Canadians, regardless of their gender (i.e. this is no longer a women's issue). Finally, these findings support the population health model which links lower socio-economic status and ill health, and suggest that workplace health efforts and interventions such as paid personal leave and health promotion activities need to be targeted to this level of the organization.

After examining the data in this report, the relevant question changes from "how much will it cost Canada to deal with the issue of work–life conflict" to "how can the nation afford *not* to address the issue of work–life conflict?" Why should employers and governments promote and practise healthy workplaces that allow employees to balance work and life? Simply put—Canada's ability to be globally competitive in the future depends on our ability to address this issue. The data presented in this report paint a frightening picture of how inattention to workplace health and work–life issues is impacting Canada's health care system. Health issues that arise due to heavy workloads at home and at work and an inability to balance conflicting demands not only cost the employer money in increased absenteeism and health benefit costs, but sick employees also have a negative impact on the health care system. As the Canadian Council on Integrated Health Care (CCIH) (2002, p. 22) notes:

8 It should be noted that there is likely to be some overlap of the costs associated with each form of work–life conflict. Total costs/potential savings cannot, therefore, be calcuated as the sum of the costs associated with each type of conflict.

"The boundaries of the workplace are permeable and costs are easily transferred to other facets of society. It is for these reasons that workplace health must become a priority for governments and not just for employees, employers and unions."

The first priority for both employers and governments is to reduce the demands on working Canadians

The data suggest that employers and governments who wish to improve the health of their workforce, reduce the tax burdens on their citizens, and positively influence the health care system need to pay attention to role overload. This form of work–life conflict is strongly associated with heavy work demands, longer hours at work, high amounts of unpaid overtime, greater amounts of work-related travel and a culture of face time (i.e. emphasis is on "presenteeism" as opposed to outputs and deliverables). It also represents the highest levels of relative and absolute risk with respect to poorer physical and mental health and all measures of use of Canada's health care system included in this study.

The main predictor of high role overload is time spent in paid employment. This research project has determined that time in work has increased dramatically over the past decade. Whereas one in ten respondents in 1991 worked 50 or more hours per week, one in four does so now; during this same time period, the proportion of employees working between 35 and 39 hours per week declined from 48% of the sample to 27%. This increase in time in work was observed for all job groups and all sectors of employment. Further work is needed to determine exactly why work demands have increased over the decade. Possible explanations drawn from the data collected for this research initiative include organizational anorexia (downsizing—especially of the middle manager cadre—has meant that there are not enough employees to do the work and managers to strategize and plan); corporate culture (if you do not work long hours and take work home, you will not advance in your career, not keep your job during downsizing); increased use of technology (technology such as e-mail has added the expectation of immediate response to the workplace); global competition (work hours have been extended to allow work across time zones, increased competition and a desire to keep costs down has limited the number of employees it is deemed feasible to hire); the speed of change has increased to the point that many organizations have lost their ability to plan and prioritize; and the fact that employees are worried about the consequences of "not being seen to be a contributor" (e.g. downsized out of a job, inability to advance).

The link between hours in work and role overload, burnout, and physical and mental health problems (see Duxbury and Higgins, 2003) suggests that these work loads are not sustainable over the long term. The data from this study reinforce this conclusion. Canadians are subsidizing, through their tax dollars and financial support of the health care system, organizational practices such as "doing more with less," downsizing, basing promotions on hours at work, setting unrealistic work expectations, managing by crisis, etc. Organizations that employ such strategies need to bear the financial costs of such strategies—not Canadian taxpayers.

The second priority for both employers and governments is to reduce caregiver strain

As noted above, this form of work–life conflict appears to be closely linked to physical health problems and higher use of medical care services and prescription medications. The percentage of the workforce experiencing high levels of caregiver strain is also expected to increase dramatically in the next decade as first the parents of the baby boomers, and then the baby boomers themselves, require care. If steps are not taken now to put policies, procedures and institutions into place to help employees care for their aging parents, the health care demands and costs associated with this kind of strain can be expected to increase dramatically in the near future.

Looking at the issue through a workplace health lens

This study has established the need for governments and organizations to take more responsibility for workplace health issues such as work–life conflict—to look at these issues through a population health lens. How can this best be done? Nineteen recommendations are given in this report: 13 addressed to governments, six to employers. The recommendations to government suggest changes to how the health care system is structured, deal with ways to make the idea of change in this area attractive to employers (e.g. financial investments and penalties), outline how they can create a public push for change in this area (e.g. social marketing campaign, a Web site communicating the costs of poor workplace practices to Canadians, forming partnerships with key stakeholders and community groups), address the issue of elder care, and call for additional funding for empirically sound research and data collection in the area. Recommendations to employers include suggestions on how to better track the costs to their bottom line of their various workplace practices, ones dealing with horizontal management of the issue, and recommendations dealing with leadership and accountability for workplace health.

Chapter 1
Introduction

What does a healthy workplace look like? Drawing from our own research and the work of others (i.e. Lowe, 2000; Duxbury and Higgins, 2001, 2003; Higgins and Duxbury, 2002; CCIH, 2002), we can identify a healthy workplace as one that:

- supports the psychological, physical and psychosocial health of its employees (i.e. has a supportive culture);
- has a measurement and accountability system in place that visibly supports people management practices;
- makes sound people management and workplace health a priority; and
- views employee health, work–life conflict, and well-being as strategic issues.

The basic objective of this report is to gain wider commitment, at both the public policy and organizational level, to the idea that pressures on Canada's health care system can be reduced by focusing on workplace health issues. Specifically, this report uses hard data to draw the link between work–life conflict, ill health and health care costs. It is hoped that the data contained in this report will motivate health care professionals and institutions, governments and employers to work together to improve the health of Canadians and to accept the idea that "healthier workplaces help create a healthier nation" and that "money alone neither causes problems in health care nor solves them" (CIHI, 2003).

This report advances the argument that the health of Canadians and the soundness of Canada's health care system can both be addressed through an agenda that focuses on workplace health and work–life conflict. We focus our arguments at two different levels: the level of the health care organization and the broader societal level. The need to address workplace health issues within the health care sector itself is supported by the work of the Romanow Commission which noted that:

> "We simply have to make health services healthier workplaces because if we don't look after health care professionals, they can't look after us." (Roy Romanow, notes for the speech to the Canadian Medical Association in Saint John (New Brunswick), August 20, 2002)

The link between healthier work environments and societal health has been advanced by CIHI (2003), and includes improved health and quality of life within communities and a reduction in the use of the health care system with its concomitant savings to health care's bottom line. It has also been recognized by researchers such as Danielle Pratt (as cited in CCIH, 2002, p. 25) who observed that:

> "Costs related to absenteeism, temporary workers, employee replacement, not to mention the opportunity cost of missed revenues and compromised quality resulting from an under-functioning workforce ... percolate throughout the organization, the health care system and society at large."

To date, relatively little attention has been paid to the potential contribution of workplace health (of which work–life conflict is a key component) to the larger issue of health care in Canada (CCIH, 2002).

1.1 Objectives of the Research

Ill health costs Canada far more in lost productivity and quality of life than what is spent to treat disease. CIHI (2003) estimated the economic burden of illness in Canada to be $159 billion in 1998. The sources of these costs include the loss of potential economic output due to absenteeism from work or school, or premature death. It should be noted that this estimate of the costs of illness is likely to be conservative, as factors such as time caring for sick friends and family, pain and suffering, and other related consequences of illness were not included in the estimates. This report seeks answers to the following research questions:

1. How do Canadian employees view their physical health?
2. To what extent are Canadian employees making use of the various facets of Canada's health care system?
3. How much do Canadian employees spend on prescription medicine?

4. What impact do gender, job type, sector of employment and dependent care status[9] have on:
   - How healthy an individual feels?
   - The use of Canada's health care system?
   - The amount an individual spends on prescription medicine?
5. How does work–life conflict (operationalized to include role overload, work to family interference, family to work interference and caregiver strain) affect:
   - How healthy an individual feels?
   - The use of Canada's health care system?
   - The amount an individual spends on prescription medicine?
6. What impact does high work–life conflict have on health care costs in Canada?

1.2 Why Do We Need a Study Like This One?

Why does Canada need to focus on workplace health and work–life conflict? It is our contention that dealing with these two inter-related issues is absolutely critical to the health of Canada's health care system, the overall health of Canadian society, and to the economic health of Canada (e.g. the organizational bottom line and the ability to recruit and retain key employees in a globally competitive labour force market). Unfortunately, little concrete Canadian evidence exists linking workplace health and work–life conflict to the bottom line (both the corporate bottom line and the bottom line of Canada's health care system). In its 2002 report, CIHI posed the following question:

> "Given the presence and impact of the workplace in most Canadians' lives, where does workplace health fit into the wider Canadian healthcare landscape? Should workplace health become more or less of a priority for Canada and why?" (p. 2)

The current report seeks to supply answers to this question. By providing sound empirical data in these areas to inform the debate, it is hoped that this report will encourage both governments and employers to focus on issues associated with healthy workplaces which provide employees the ability to balance work and life.

Canada's health care system needs a cure

Canada's health care system is "under siege" and both health and health care are top priority concerns for Canadians (CCIH, 2002). Popular media and academic studies alike note that emergency departments in many parts of the country have become over-crowded in recent years and there is often a wait for hospital beds, diagnostic care and treatment (CIHI, 2002). Wait times for health care remain a key issue for Canadians. In 2001, one in five patients aged 15 or older who had received specialized services reported that waiting for care had a negative impact on his or her life. Common ways that waiting for care had impacted Canadians included pain, poorer health, trouble doing everyday tasks, worry, anxiety and stress, and loss of work or income (CIHI, 2002). For those working within the health care system (according to CIHI [2002], one in ten employed Canadians works in health and social services), a major issue continues to be health human resources (HHR) (CIHI, 2003). Key questions linked to this issue include: Do we have enough personnel in the right places to provide care? Is the health care workplace healthy? How can we improve HHR planning and capacity?[10]

Reflective of this concern on the part of their citizens, several provinces and territories (New Brunswick, Quebec, Saskatchewan, Alberta, British Columbia, Northwest Territories) completed major reviews of their health care systems in 2002 (CIHI, 2002) and the federal government commissioned two major studies: the Kirby Commission (the Federal Role in Health of Canadians) and the Romanow Commission (The Future of Health Care in Canada) (CIHI, 2002).[11] Yet, despite all the study, there appears to be lack of consensus on what Canada can do to "fix" its health care system. Some groups doubt that internal reforms can adequately contain health care costs and suggest exploring non-tax–based sources to finance increases. Others espouse internal reforms to the system itself, a reduction in the comprehensiveness of publicly financed services or use of other non-governmental revenue sources of funding (CIHI, 2002). CIHI does, however, note the following common themes in these studies:

- there is a need for timely, accurate and reliable data on the health of Canadians and the health

9 Defined in this study as an employee who spends at least one hour a week in child care, elder care or both.

10 A full discussion of these question can be found in CIHI (2003).

11 CIHI (2002, p. 5) provides an excellent table outlining where these studies were done and where the findings can be obtained.

care system as we cannot improve what we cannot measure (CIHI, 2002),

- primary health care renewal is central to the sustainability and revitalization of Canada's health care system (CIHI, 2003), and
- any new investments in the health care system need to be used to buy lasting change (CIHI, 2003).

We need to recognize the link between work and health

For most Canadians, paid and unpaid work is a part of daily life. Good health is an important precondition for meeting these demands (CCIH, 2002). Health is, however, affected by more than just health care (CIHI, 2002). A large number of factors, many of which are beyond the formal authority of the health care system, affect Canadians' health status (Statistics Canada, 1999). Trends affecting organizations and health include an aging population, a declining birth rate, falling after-tax incomes, and increased labour force participation by women (Statistics Canada, 1999). There is also extensive literature linking health and socio-economic factors (Townson, 1999). This research notes the strong negative association between "good" health and "wellness" with poverty, unemployment, poor housing, lack of education and child poverty. Townson (1999, p. 95) typifies the view of many when she notes that:

> "The mantra of globalization and the perceived need for international competitiveness are increasingly invoked to justify inaction or to explain social or economic policies that have profoundly negative consequences for population health."

Many of the health care challenges that face Canada have workplace connections (CCIH, 2002). Recent research indicates that unhealthy work environments and heavy workloads are associated with a myriad of health problems (Duxbury and Higgins, 2001, 2003; CCIH, 2002; Higgins and Duxbury, 2002). CCIH (2002, p. 22) notes that:

> "Paradoxically, the workplace has become an environment that both contributes to employee ill health while simultaneously offering the most potential for improving overall employee health and well-being."

CCIH (2002), in its review of academic research on workplace health, found that in the 21st century definitions of health have broadened to include psychosocial well-being as well as physical health. As such, workplace health is critical to "good" health (CCIH, 2002). Research in this area indicates, however, that initiatives to improve workplace health which focus purely on health promotion are not sufficient to improve a multifaceted definition of health (CCIH, 2002). This contention has been supported by some recent ground-breaking studies which have focused on the link between work environment and employee well-being (Lowe, 2000; Shain, 2000; Duxbury and Higgins, 2001, 2003; Lowe and Schellenberg, 2001; Higgins and Duxbury, 2002).

Workplace health programs are likely to have little impact on employee health unless key conditions, such as supportive policies, an enabling culture and leadership from the top are in place (CCIH, 2002). In its 2002 report, CCIH reached the following conclusion:

> "While public policy, employers and unions have demonstrated varying degrees of commitment to the concept of workplace health in the past, all Canadians would benefit from the creation of a new and different environment—one that recognizes the need to develop a collaborative strategy for health in the workplace as a national priority." (p. 4)

CCIH (2002) also argues that a "new mindset" with respect to workplace health is necessary for progress to be made in this area. It is hoped that this report will inform this debate by looking at the link between use of the health care system, impaired health, non-supportive work environments and work–life conflict.

Organizations that deliver healthier work environments have healthier bottom lines

In its 2002 report, CCIH put forth the argument that there is "a very real value proposition for employers who adopt a more proactive approach to workplace health (p. 4)." In other words, employers have the potential to positively affect their bottom line by creating a healthier workplace (CCIH, 2002). The costs of ill health and high work–life conflict for employers are overwhelming. In our second report in this series (Duxbury and Higgins, 2003), for example, we determined that absenteeism that could be attributed to high work–life conflict costs Canadian organizations approximately $6 to $10 billion per year. Specifically:

- The direct costs of absenteeism due to high role overload were estimated to be approximately $3 billion per year. This estimate increased to $6

billion per year when indirect costs were included in the total.

- The direct costs of absenteeism due to high levels of work to family interference were estimated to be $1 billion per year in direct costs alone (costs increased to $1.5 to $2 billion if the indirect costs of this absenteeism were also included).
- The direct costs of absenteeism due to high levels of family to work interference were estimated to be just under half a billion dollars a year (approximately $1 billion per year when indirect costs were also included in the total).
- The direct costs of absenteeism due to high levels of caregiver strain were calculated to be just over $1 billion per year (indirect costs were estimated at another $1 to $2 billion).

The costs to the employer are not, however, constrained to absenteeism. Compared to their counterparts with low levels of role overload[12], employees with high role overload were:

- 5.6 times more likely to report high levels of job stress,
- 2.3 times more likely to report high intent to turnover,
- half as likely to report high levels of job satisfaction, and
- approximately half as likely to have a positive view of their employer.

Recruitment and retention—in the health care system and beyond—can be linked to workplace health

Within the decade, Canada, along with much of the industrialized world, will need to address labour force shortages as the demand for labour exceeds the supply in many key areas. This labour force shortage can be attributed to four factors: low fertility, an aging population, the large number of baby boomers reaching retirement age and increased mortality (Bachmann, 2002). These factors are spurring organizations to focus on recruitment and retention of key workers (Bachmann, 2002). What strategies are employers using to attract the new generation of employees to their organization and to ensure that their good baby boomers do not take early retirement? Bachmann (2002) identifies the following: new compensation packages, reward and recognition programs, training and career development.

Will such strategies be effective? The data that are available suggest no, as they do not deliver what either the new generation of workers or the aging baby boomers say they want from a job—a psychosocially healthy workplace (i.e. work environments that offer challenging work, career development, work–life balance, reward and recognition, and respect) that delivers on workplace health programs (Bachmann, 2002). Furthermore, the research that is available in this area indicates that to ensure that employees are satisfied, motivated and committed, organizations need to deal with issues related to health and well-being (Bachmann, 2002).

Recent research indicates that the factor that has the strongest association with employee commitment is managers' recognition of their employees' needs for work–life balance. Work–life balance, in its turn, has been shown to be a key to employee well-being (AON Consulting, 2000; Duxbury and Higgins, 2001, 2003; Bachmann, 2002; Higgins and Duxbury, 2002). In other words, employers have to start delivering on their promises with respect to the provision of supportive work environments and work–life balance. It is hoped that the findings from this research will encourage governments and employers to do just that.

12. Role overload is one of four dimensions of work-life conflict examined in Duxbury and Higgins (2003) and is used here for illustrative purposes. Similar findings were observed with respect to the other three facets of work–life conflict.

Chapter 2
Background

This chapter of the report puts the research into context. It is divided into three major sections: the first focusing on the health care system, the second outlining models that have been used to formulate health policy and action, and the third discussing workplace health issues. Section 1 presents data on how much it costs to keep Canadians healthy. Included in this section are statistics outlining how much Canada spends to keep its population healthy, how these expenditures have changed over time, and a discussion of who pays for what. Three key models that can be used to frame the analysis—health promotion, population health and the index of social health—are discussed in Section 2. The third section provides information on both sides of the workplace health debate: why companies should invest in workplace health and why they currently are not doing so.

Also included in this chapter are two text boxes that were created to assist the reader. Box 1 provides source information for most of the data used to develop this chapter. Box 2 provides working definitions for key constructs, such as health, well-being, health promotion and population health. Finally, the reader who is interested in how Canadian thinking around health and health care has evolved over time can find a brief summary of this topic in Appendix A.

Box 1

Sources of Data on Canada's Health Care System

Data describing Canada's health care system were largely drawn from reports produced by the Canadian Institute for Health Information (CIHI) and Statistics Canada. The CIHI has, in conjunction with Statistics Canada, been providing an annual report on the status of Canada's health care system for the past four years. These reports gather the most recent data about Canada's health care system and, where possible, compare them to those of other countries. They also cover issues of the day, give analyses of topics of ongoing importance, and provide information on various health care indicators. These reports, along with a companion report prepared by Statistics Canada in 1999 entitled *Statistical Report on the Health of Canadians* and a document written by the Canadian Council on Integrated Health Care (CCIH) in 2002, have provided most of the background information cited in this report.

Box 2

Definitions: Health, Well-Being, Health Promotion and Population Health

Health: Most governments, including federal and provincial/territorial health departments in Canada, have adopted definitions of health similar to those advanced by the World Health Organization (WHO) which recognizes health "as more than the absence of disease, as a resource for everyday living" (Statistics Canada, 1999, p. 215; WHO as cited in CCIH, 2002). Others define health as:

- a complete state of physical, mental and social well-being, and not merely the absence of disease (Townson, 1999); and
- a "resource" to meet the needs of daily life and not the objective of living (CCIH, 2002).

Well-being or positive mental health has been defined as:

- consisting of those physical, mental and social attributes that permit the individual to cope successfully with challenges to health and functioning (Statistics Canada, 1999, p. 220).

Health promotion has been defined as:

- "the process of enabling people to increase control over and to improve their health" (WHO as cited in Townson, 1999); and
- the science and art of helping people change their lifestyle to move toward a balance of physical, emotional, social, spiritual and intellectual health (CCIH, 2002).

Population health has been defined as:

- an approach that addresses the entire range of factors that determine health and, by so doing, affects the health of the entire population (Townson, 1999, p. iii).

2.1 How Much Does It Cost to Keep Canadians Healthy?

National health expenditures are disbursements for which the primary objective is to improve or prevent the deterioration of health status (Statistics Canada, 1999). They include expenditures in both the public and private sector for personal health care (i.e. health services used by individuals), as well as expenditures made on behalf of society for items such as public health and managing the health care system (Statistics Canada, 1999). Typically, health care expenditures are grouped into seven major categories of use: hospitals, physicians, drugs, other professionals, other institutions, capital and other health spending (Statistics Canada, 1999).

To inform this report, the next section outlines how much we currently spend on health care, how we use that money and how our spending patterns are changing over time. The source of the data included in this section of the report is outlined in Box One.

Canada spends over $100 billion per year providing health services to Canadians

Health care is a large, resource-intensive industry. More than 1.5 million Canadians worked in health care and social services in 2000 (CIHI, 2002). The following statistics provide us with an idea of the economic burden associated with keeping Canadians healthy:

- Researchers estimated that the total economic burden of illness in Canada in 1998 was $159.4 billion. Direct costs were $83.9 billion; indirect costs were $75.5 billion (CIHI, 2003). Four diseases (cardiovascular, musculoskeletal, cancer and injury) accounted for 39% of these costs (CIHI, 2003).
- The average health care spending per household in Canada in 2000 was $1,357—up from $1,009 in 1996 (Statistics Canada, 1999).
- In 1996, Canadians spent 3% of their after-tax earnings on health care (up from 2.3% in 1978). The majority of these expenditures went to pay for insurance premiums, medicinal and pharmaceutical products and dental services (Statistics Canada, 1999).
- In 2001, Canada spent an average of $3,300 per person ($102.5 billion per year) providing health services to Canadians (CIHI, 2002).
- In 2002, Canada spent an estimated $122 billion (an average of $3,572 per person) on health care. Hospitals, retail drug sales and payments to doctors accounted for over 60% of total spending (CIHI, 2003).

Spending on health care has increased over time

Annual increases in health care costs are the norm in Canada. With the exception of the mid-1990s, there has been steady growth in health care expenditures over the past several decades. Between 1997 and 2002, total health spending in Canada grew by almost $34 billion (an unprecedented rate of increase) and is at an all-time high, even after taking into account inflation and population growth (CIHI, 2003). The following statistics give the reader a clearer picture of the extent to which health care costs have increased over time:

- Health care spending accounted for 32% of total government expenditures, including debt charges in 2000—up from 27% in 1975 (CIHI, 2002).
- Adjusted for inflation and population growth, health care spending rose 4.3% in 2001 compared to 2000. This increase in health care spending occurred every year for the previous four years (CIHI, 2002).
- When population growth and inflation are taken into consideration, spending on health care in 2001 was 80% higher than in 1975 (CIHI, 2002).
- In Canada, spending on health care has increased at a faster rate than overall economic growth. In 2001, Canada spent about 9.4% of its gross domestic product (GDP) on health care. This is higher than observed in 2000 when Canada spent 9.1% of the GDP on health care (CIHI, 2002).
- Canada's combined public and private health care bill rose by over 43% between 1997 and 2002. Inflation accounted for only one quarter of this increase. Population growth accounted for a further 11%. Rising levels of public (a 49% increase) and private (a 16% increase) spending per person accounted for the rest of the upswing (CIHI, 2003).

Per capita expenditure is the average value of health expenditures at the personal level and for each category of spending. Per capita information allows comparisons over time by removing the effect of population growth (Statistics Canada, 1999). Per capita expenditure data can also be used to illustrate the extent to which health care expenditures have increased over time. Consider the following data:

- Health care spending per person rose faster from 1998 to 2002 than in any period since Medicare was introduced (CIHI, 2002).

- In 2003, total public and private spending on health care per person (adjusted for inflation) rose for the sixth straight year in Canada (CIHI, 2003).
- Between 1975 and 2001, Canada's total health expenditures had increased at an average annual rate of 9.8% per capita (CIHI, 2002).

Why the larger increase in health care costs between 1997 and 2003? CIHI (2003) provides the following answer to this question:

- population growth accounts for $3.7 billion of this total,
- inflation accounts for $8.3 billion of this total,
- increases in public spending on health per person account for $16.3 billion of this total, and
- increases in private spending on health per person account for $5.2 billion of this total.

On the one hand, most of the increase in public spending on health can be attributed to changes in spending on hospitals (29% of the growth), drugs (15%) and capital investment (14%). Most of the increase in private spending on health, on the other hand, is associated with drugs (46%) and payments to other health care professionals such as dentists and optometrists (33%) (CIHI, 2003).

The increased incidence of stress over the decade (see Duxbury and Higgins, 2001, 2003) has likely also contributed to increased health care costs. Both chronic stress and life events have been found to have, at the very least, a strong indirect impact on physical and mental health by affecting the physiology and morphology of the circulatory system and an effect on the development of cancer by psychoneuroimmunological mechanisms (Statistics Canada, 1999). With the exception of pregnancy and related conditions, the major causes of hospitalization and death in Canada are stress related (Statistics Canada, 1999). Since work is such an important facet of daily life for so many Canadians, the stress they experience at work is a key determinant of overall mental health (Statistics Canada, 1999).

How we spend our health care dollars has also changed over time—less money is spent on hospitals

The way Canadians spend their health care dollars has changed significantly over the past several decades. In 1975, almost half (45%) of health care spending in Canada went to hospitals. While hospitals were still the largest single recipients of health care spending in 2002, their share of total health spending had dropped to 31% (CIHI, 2003). The pattern of spending within hospitals has also shifted, and the proportion of funding spent on salaries has declined while the percentage of the budget devoted to benefits, drugs and medical supplies has increased (CIHI, 2003).

Twenty-five years ago, physician services were the second largest recipient of health care spending, followed by other health institutions, other health care professionals and then drugs. Today, this ordering has changed; spending on drugs (16%) has overtaken physician services (14%) as the second largest cost driver (CIHI, 2003).

More money is spent on prescription and non-prescription drugs and home care

The fastest growing component of health care expenditures, drug costs, have grown at an average rate of more than 11% over the past five years (Duffy, 2002). Retail sales of drugs (both prescribed and non-prescribed) has become the second largest category of health spending, accounting for 16% of all expenditures ($18 billion in 2002). Approximately two thirds (65%) of these expenditures were assumed by private insurance companies and individual Canadians (CIHI, 2003).

The other fast-growing sector of health spending is home care services. In 1980-81, Canadian governments spent $205 million on home care. This had increased to $2.5 billion in 2000-01. A similar trend can be observed with respect to private spending on home care. CIHI (2003) attributes this increase to the following factors: changing demand for home care (e.g. Canadians are living longer), more reliance on home care as an alternative to hospital care, changes in the availability of informal care, and more emphasis on self-managed care.

2.1.1 Who pays for health care?

In Canada, many groups share the costs of health care. In 2001, about three quarters (73%) of total expenditures (i.e. approximately $2,400 per person) was provided by public sector sources (i.e. federal, provincial/territorial and municipal governments). The rest came from private sector sources (e.g. insurance) and individuals (e.g. out-of-pocket expenses) (CIHI, 2002).

Seven out of every ten health care dollars come from the public purse

In 2002, seven out of every ten dollars spent on health care came from the public purse (CIHI, 2003). Government and social security programs spent just over $70 billion on health care. The rest (a total of $32.9 billion in 2002) comes from private sources, such as insurance plans or

out-of-pocket payments. It should be noted, however, that governments also share these costs through foregone tax revenues as firms can deduct insurance premiums from their taxable income while employees do not pay taxes on these benefits (CIHI, 2003).

Health care spending varies widely by province and territory. This variation can be attributed to factors such as health needs, how health care is organized and delivered, the salaries paid to medical service professionals, and demographic differences in provincial/territorial populations (e.g. average spending is linked to both gender and age) (CIHI, 2002).

While overall government spending on health care has increased significantly over the past several years, the number of supported services has dropped. For example, some jurisdictions have de-listed needed services such as optometry and physiotherapy, and continue to underfund key areas such as mental health and home and community-based services (CCIH, 2002).

In Canada, both public and private sectors pay part of the drug bill. Public sector payments come from governments, Workers' Compensation Boards and social security systems. Individual Canadians pay some of the drug costs out of their own pockets, while private insurance (often provided through the employer) is the other major source of funds (CIHI, 2002).

Employers contribute a substantive amount to the costs of health care in Canada

In the past several years, provincial/territorial governments across Canada have responded to federal fiscal tightening by reducing their own role in financing health care. Government cutbacks have increased the need for the private sector to assume many of these costs through benefits programs. One of the main consequences of this set of strategies has been the growth of private health care expenditures, from 25.5% of all health care funding in 1991 to 29.8% of spending in 1997. This growth has occurred because private plan sponsors (e.g. companies) and individuals have no choice but to pay for these services if they want to facilitate an early return to good health (and hence to work). In fact, the role of the private sector in health care funding has become so critical that "private health plans can no longer be considered 'fringe benefits' to employers or to Canada in general" (CCIH, 2002, p. 27).

Drugs and payment for the services of other health care professionals (e.g. chiropractors, dentists, physiotherapists, optometrists), dental and vision care account for most private spending. The private share of spending varies by the type of service.

The private sector's share of health costs has increased in the past decade

A 1996 Conference Board study found that the costs of providing a supplemental health plan increased by an average of 26% between 1990 and 1994. Between 1980 and 2000, the percentage of total health care expenditures paid for by the private sector grew from 24% to 29% (Bachmann, 2002) while the share of prescribed drugs financed by private insurers increased from 30.5% in 1985 to 33.5% in 1999 (Bachmann, 2002). The major factors contributing to these increases were rising drug costs, the rising cost of dental services, greater utilization of these plans by employees, inflation and cost shifting of services from provincial/territorial plans (Bachmann, 2002). The current situation is not expected to improve in the next several years as recent forecasts have predicted an increase in drug claims of up to 20% (Bachmann, 2002). These data support our contention that employers should place a high priority on workplace health programs that reduce health costs to their bottom line.

Individual employees also have substantive "out-of-pocket" health care expenditures

Individual Canadians pay for health care both directly (health insurance premiums and out-of-pocket health care expenses) and indirectly (the taxes Canadians pay contribute to public spending on health care) (CIHI, 2002). Just under 15% of health care spending is in the form of "out-of-pocket" expenses assumed by the employee/patient (CIHI, 2003).

2.1.2 How much does Canada spend on health care compared to other countries?

Canada spends more on health care than most countries, but does not enjoy better health

Canada spends more on health care in relation to the size of its economy than every country in the world except the United States (13% of GDP), Germany (10.6% of GDP) and France (9.5%) (Duffy, 2002; CIHI, 2003). The magnitude of the differences are illustrated by the following statistics:

- After adjusting for differences in exchange rates and cost of living, Canada spent more per person than 25 of the 29 Organisation for Economic Co-operation and Development (OECD) countries in 1998 (CIHI, 2002).

- In 1997, Canada ranked fourth among the Group of 7 (G-7) industrialized countries in total health expenditure as a percentage of GDP (Statistics Canada, 1999).
- In 2001, 9.3% of Canada's GDP (a measure of economic output) went to health care, up from 7.3% in 1981 (CIHI, 2003).

The research that is available indicates that those countries that spend more on health do not report higher life expectancy (CIHI, 2003). Starfield and Shi (2002), for example, have done research that suggests that countries with stronger primary health care systems spend less on health care. They based their conclusions on per capita health care expenditures in 1997 and countries' scores on 15 health system and practice characteristics deemed to facilitate primary care (CIHI, 2003). Using Starfield and Shi's criteria (see the graph on p. 36 of CIHI, 2003), Canada achieves a "middle of the pack" score of 17.5—better than the United States' score of 6.0 and Germany's 5.5 but significantly lower than the United Kingdom (29) and Denmark (26).

2.2 Models That Can Be Used to Frame the Discussion

During the 1990s, two different models were used to formulate health policy and action: health promotion and population health. Somewhat simplistically, the basic difference between the two models is that population health is concerned with the social determinants of health, while health promotion focuses on the individual (Townson, 1999). Details on each model and its association with workplace health are given below. Information on a third model that has relevance to this issue, the Index of Social Health, is also included in this section of the report.

2.2.1 Workplace health promotion

Workplace health promotion is defined as the "art and science of helping individuals change their lifestyle more toward a state of optimal health" (Bachmann, 2002, p. 3). Optimal health, in turn, is defined "as a balance of emotional, physical, social, spiritual and intellectual health" (Bachmann, 2002, p. 3). Primary health promotion activities (e.g. education, immunization, general health promotion campaigns) focus on eliminating health risk factors and preventing disease before it develops (CIHI, 2003). Secondary health promotion activities (e.g. screening programs) are concerned with early detection and treatment of disease in people who do not show symptoms (CIHI, 2003). At this point in time, we do not know how much is spent in Canada per year on workplace health promotion and disease prevention activities and programs (CIHI, 2003). Nor do we know how much is spent on complementary and alternative therapies.

Traditionally, workplace health has focused primarily on occupational health and safety

Traditionally, when employers and governments have focused on workplace health, they did so primarily on occupational health and safety (OH&S) issues related to the physical work environment (e.g. hygiene, safety, physical health, hazards), which is monitored through OH&S legislation (Bachmann, 2002; CCIH, 2002). The impact of monitoring legislation seems quite clear. Between 1970 and 1997, the incidence of workplace injuries in Canada fell from 11.3 to 6.4 per 1000 workers while the incidence of time-loss injuries decreased from 4.3 to 3.2 per 100 workers (Bachmann, 2002).[13]

The OH&S approach to workplace health is necessary, but not sufficient, to address the needs of today's workforce. Companies today need to take an expanded view of workplace health and focus on the issues that are impairing the physical and mental health of their employees—issues such as work–life conflict, heavy workloads, etc. The movement to extend the focus of workplace health beyond health and safety is occurring worldwide (CCIH, 2002). In 2001, Smallman (as cited in CCIH, 2002) published a comprehensive review of 55 peer-reviewed empirical studies in the area of health and safety. This review covered research done in the United States, United Kingdom, Canada, Norway, Sweden, Germany, Hong Kong, India and Taiwan. From this research, he concluded that:

> "The health and safety system needs to do more than just prevent work-related harm. It must promote better working environments characterized by motivated workers and competent managers." (Smallman, 2001, p. 401)

CCIH (2002) notes that over the past several decades there has been a shift in our understanding of workplace health. As such, the focus on OH&S has been supplemented by a call for workplaces to adopt health policies, procedures and practices that go beyond compliance with legislation and focus instead on work environment issues. In other words, the approach to

13 While these data reflect a significant improvement in physical working conditions and a concomitant decline in the incidence of work-related fatalities and injuries over the past several decades, there is still a substantive amount of work that remains to be done in this area.

workplace health is becoming more consistent with the population health model.

Why do we need a new vision of workplace health promotion?

Several arguments can be made for expanding workplace health promotion offerings beyond simple OH&S efforts. The first argument revolves around the idea that people may, for one reason or another, fail to follow personal health practices. Researchers have compiled a long list of reasons, including lack of time, lack of knowledge about fitness/nutrition, lack of access to facilities, fatigue, boredom, lack of incentives, psychological barriers, delayed gratification (benefits are felt in the future but the effort must be made now) and socio-economic status (Bachmann, 2002). No matter what the cause, however, organizations that rely on their human capital need to reduce the probability that their employees will engage in unhealthy practices by designing appropriate health promotion programs. The second argument revolves around the business case for introducing such programs. Bachmann (2002, p. 1) does an excellent job of making this case:

> "Whether health promotion programs are a frivolous cost or a sound investment is not the correct topic of debate. Rather the discussion should be at a more strategic level because there is mounting evidence that workplace health promotion, when included in a broader, more integrated approach to employee health, can result in cost savings, higher levels of productivity and enhanced worker engagement and retention."

Pratt's (2001) work on the healthy scorecard can be used to make the third argument for expanded workplace health promotion programs. Pratt (2001) points out that most companies today pursue costs containment as their number one reason for health promotion, health benefits, etc. She feels that this perspective is misguided and recommends instead that organizations introduce health promotion programs that reduce the event rate for stress, illness and injury (i.e. the incidence of the event and the severity of the event). Her rationale for this argument is that the costs incurred by an organization to reduce the occurrence of an event are typically much less than the cost of curing the employee once the person is sick. Bachmann (2002, p. 1) concurs with this view and notes that many leading organizations are moving away from a narrow focus on return on investment (ROI) measures and are aligning workplace health programs with human capital management, "employer of choice" or triple bottom line reporting strategies."[14]

The evidence supporting workplace health programs is still subject to debate

The value of workplace health programs continues to be debated based on their return on investment for the organization (Bachmann, 2002). Research methodologies in particular are open to criticisms, including self-selection, short duration of evaluation, subjectivity of measures, diffusion of information, and intervening and confounding factors (Bachmann, 2002). That being said, Bachmann (2002) does offer a number of examples of how health promotion programs can save organizations money:

- University of Michigan reported that for every $1 (U.S.) spent on workplace health programs, the organization saved U.S.$1.50 to $2.50 (U.S.) on health care costs and absenteeism.
- Steelcase observed a decline in average health care costs over a three-year period from $1,122 to $993 (U.S.) among employees who shifted their health behaviours from high risk to low risk.
- B.C. Hydro's 1996 internal cost benefit analysis of the organization's wellness program estimated that the company saved $3 for every $1 (Cdn) spent on the program.

She also notes, that to achieve benefits from health promotion, an organization needs to do two things: (1) adopt a broad set of programs, and (2) take a holistic approach rather than focus on a single program (Bachmann, 2002). Furthermore, she points out that research has shown that health promotion programs that include counselling, offer the employee a choice of interventions and take into account the culture of the organization were more successful in reducing risk factors than programs which featured a more restricted choice of interventions (Bachmann, 2002).

But not everyone feels positively about the health promotion approach

Not everyone feels positively about the health promotion approach to workplace health. Critics of the health promotion approach, such as Townson (1999), note that

14 Triple Bottom Line Reporting, as defined by Bachmann (2002), focuses on three elements of organizational sustainability: (1) economic (wages, benefits, labour productivity, job creating, training and development), (2) environment (impacts of processes, products and services on air, water, land, biodiversity and human health) and (3) social (workplace health and safety, employee retention, labour and management rights, working conditions).

such a strategy individualizes both the root of the problem and many of the remedies. It also means that companies and governments do not need to tackle issues like work environment, income distribution, control over the environment or the medical establishment. Townson (1999, p. 6) summarizes this point of view when she says that the health promotion approach "Exhorts individuals to live better and implicitly blames them for their own illnesses."

2.2.2 The Population Health Model

The competing model to health promotion is the population health approach put forward by Dr. Fraser Mustard. Population health is defined as the "label used to describe the analysis of major social, physical, behaviour and biological influence upon overall levels of health status within and between identifiable population groups" (Townson, 1999, p. 6). "The goal of a population health approach is to ward off potential health problems before they require treatment within the health care system" (Senator Kirby as quoted in Bachmann, 2002, p. 16). The population health approach is based on the idea that health problems can be prevented by modifying the impact of cultural, economic and social factors on the health of populations.

The population health model assumes that health is influenced by many factors other than health care

According to the population health model, health services are not the only (or perhaps even the most important) influence on health (Townson, 1999). Instead, this model suggests that policies to improve population health need to address the following: living and working conditions, physical work environment, personal health practices (e.g. lifestyles) and health services (Townson, 1999).

A workplace health model that takes a population health-based perspective addresses issues from three perspectives:

- the physical work environment (e.g. occupational health and safety issues);
- the psychosocial work environment (e.g. management practices and strategies); and
- individual health practices (e.g. lifestyle choices and health habits) (Bachmann, 2002).

The psychosocial work environment has been defined as a set of organizational job factors that deal with the interaction between people, their work and the organization (Bachmann, 2002, p. 10).

Health policy in Canada has largely focused on the health care system itself

At this point in time, factors identified by the population health model as affecting health (e.g. work environment, ability to balance work and life) remain largely outside the scope of national health policy. Townson (1999) points to a large gap between what the government identifies as causes of concern (e.g. socio-economic factors) and what is actually being done in the area of population health. She notes that social and economic policies which address these key socio-economic factors "have not yet been incorporated into strategies to improve the health of Canadians" (p. 8).

Support for Townson's (1999) point of view comes from work done by the National Forum on Health in the mid-1990s. This group undertook two years of consultation and research on the topic of population health and drew the following conclusion in a report released in late 1996:

> "Despite what is known about the determinants of health, the general public continues to be mainly concerned about healthcare, especially when services are seen to be threatened. As well, governments and public administrators have not demonstrated in their decisions any appreciation of the impact of social and economic determinants and their impact on the health of individuals and communities" (cited in Townson, 1999, p. vii).

In Canada, as in many industrialized countries, health policy has focused on the health care system itself (Townson, 1999). The debate with respect to health policy generally focuses on the legitimacy of the financial claims on the health care system made by various health care professionals (doctors, hospitals, nurses) and beneficiaries (Townson, 1999). As Townson (1999, p. 19) notes, there is little attention to perhaps the most important question of all: "What reforms would help improve the health of the population?"

2.2.3 The Index of Social Health

The standard of living of societies has traditionally been measured by their GDP per capita (Townson, 1999). Within the past decade, however, there has been a movement to augment this indicator by including social indicators and indicators of well-being. Statistics Canada (1999), for example, argues that because economic indicators such as the GDP fail to take into account non-economic activities or the negative impacts of economic activity it means that they are not good

indicators of social health. Construction of a comprehensive indicator of social health that provides an accurate picture of the relationship between social health, well-being and overall health is, however, a non-trivial issue given the large number of potentially important social indicators. To overcome this issue, a composite measure (the Index of Social Health or the ISH) was developed in 1997 by Brink and Zeesman of Human Resources Development Canada (HRDC). This index is made up of 15 social indicators which have been found to have an impact on overall population health as it is commonly defined (e.g. infant mortality, unemployment, homicides, gap between rich and poor, number of beneficiaries of Canada Assistance Plan). Statistics Canada (1999) reports that the ISH gives a more comprehensive view of the health of society than traditional measures of progress such as GDP or the Human Development Index (the United Nations' measure of quality of life).

The ISH provides two pieces of information that are important to this study: (1) a summary of the health of Canadian society that incorporates the ideas of social health and societal well-being, and (2) information on how this social health has changed in Canada since 1970 (Statistics Canada, 1999).

According to Statistics Canada (1999), the ISH increased impressively in Canada from 1970 to 1980. The peak values were, however, reached in 1980. Since this time, there has been a slow and steady decline.[15] In 1995, the index stood at 50, which means that the indicators were at only half the maximum levels they had reached during the 25-year period. In sharp contrast, Canada's GDP continued to increase markedly from 1970 to 1995 (Statistics Canada, 1999).

This index suggests that the quality of life and the social health of Canada has declined since the early 1980s, even as economic output has grown. Since this negative association followed several years when social health and economic output were very highly correlated, these data suggest that policy choices starting over a decade ago have led to a divergence of the two trends. This suggests that a different course in economic and social policy could restore the positive trend in social health (Statistics Canada, 1999).

2.3 Workplace Health

This section begins with a summary of evidence from the literature supporting an investment in workplace health. It concludes with an objective discussion of why such investments in this area are the exception to the rule rather than the norm.

2.3.1 Why invest in workplace health?

If people really are Canadian organizations' most valuable resources, why aren't more organizations creating work environments that contribute to the health and well-being of their workers? Why are governments and organizations still debating this issue when there is a large body of compelling evidence that links supportive work environments and organizational success (Bachmann, 2002)?

It's all about the bottom line

The data that are available provide convincing proof that dealing with issues around workplace health and work–life conflict can have a significant, positive impact on Canadian society, the health care system and our ability to compete globally (see Schmidt, 1999; Chen et al., 2000; Bachmann, 2002; Duxbury and Higgins, 2003 for examples). A sampling of these data—all examples and references cited in CCIH (2002)—are provided below:

- Members of the Canadian Life and Health Insurance Association (CLHIA) made health benefit payments in Canada of $12.5 billion in 2000. These health benefits included drugs, other medical/hospital, disability, dental, and accidental death and disability. In 1990, the CLHIA paid $5.9 billion in costs.
- In 2002, Statistics Canada noted that absenteeism in Canada had increased to 8.5 days per year for each full-time worker in 2001 from 7.4 days per year in 1996. Canada lost 85.2 million workdays for personal reasons in 2001 versus 65.5 million days in 1996. (Note: these totals do not include vacation and maternity leave.) Approximately 75% of time lost for personal reasons could be attributed to illness or disability. This absenteeism was estimated to cost Canadian businesses about $3.5 billion per year.
- A 2000 survey of 41 major Canadian employers, done by Mercer Consulting, indicated that these organizations spent between 2% and 8% of their payroll on absenteeism. These are estimates for

15 With the exception of a brief, modest recovery in the late 1980s.

direct costs only and do not include the costs associated with replacement workers and casual absence.

- Watson Wyatt's 2000-01 "Staying@Work" survey of 281 Canadian employers determined that the direct costs of absenteeism and disability were 7.1% of payroll. When they included the indirect costs for overtime and replacement workers (6.2%) and lost productivity (4%) in this total, they arrived at a cost estimate of 17% of payroll.
- The Association of Workers' Compensation Boards of Canada noted that in 2000 there were 392,502 new lost time claims. This was estimated to cost just over $4 billion.
- A 2001 Health Canada study done by Stephens and Joubert stated that mental illness was a $14-billion health issue in Canada.
- The CLHIA estimates that depression costs $300 million per year in long-term disability payments. The World Health Organization predicts that depression will become th second leading cause of disability (heart disease is predicted to remain number one) by 2020.
- BCE Emergis noted that 8.7% of its paid claims (or $8.7 million) were for prescriptions used to treat depression. This was the largest drug category in its 2001 listing of the 20 "most expensive disease states."
- In 2001, approximately half of short-term and long-term disability claims were for mental and nervous disorders—an increase from 30% of disability claims in 1990 and 15% in 1980.

Cost data from our own research (see Section 1.2) can also be used to establish the link between work–life conflict and the bottom line.

Why do companies not invest in workplace health programs? The research available indicates that most Canadian companies do *not* make a strategic decision to support workplace health programs. Nor do they link support of workplace health to business viability or the bottom line. Rather, many view health benefits as a tax-effective form of total compensation (CCIH, 2002).

2.3.2 Why are organizations and governments not addressing workplace health issues?

Senior management has a critical role to play in creating a healthy work environment as they make most of the decisions about how, when, where and under what conditions work gets done (Bachmann, 2002). Why, given the evidence presented above, do senior managers not embrace the concept of workplace health?

Lack of leadership and a focus on the short term

Problems that researchers have encountered with respect to building the business case for workplace health include the following (see Bachmann, 2002 for a more complete discussion):

- the costs of improving health of workers are incurred in the present, while the desired benefits and savings are often not realized for many years;
- in some cases, prevention programs result in higher health costs for organizations as they may uncover medical conditions in their employees that require an ongoing course of treatment;
- unions fear that shifting the focus away from occupational health and safety to the broader concept of employee well-being may water down efforts to eliminate physical hazards in the workplace;
- an integrated approach to workplace health requires a level of cooperation and coordination between employees, employers and unions that is simply not present in many firms; and
- many of the groups interested in employee health (e.g. human resources, wellness practitioners, operational management, OH&S specialists) work in professional silos. As such, there is a high potential for duplication of effort which may diminish the positive outcomes experienced from the programs. There is also little synergy between the various groups.

CIHI (2002) adds the following barriers to the list:

- Canadian governments provide little incentive (except for legislated requirements concerning occupational health and safety) for employers or other health care benefit providers to focus on the workplace;
- the research available has not yet established to what extent workplace health initiatives lead to positive performance or productivity-related outcomes; and
- there is relatively little government leadership or assistance offered in relation to the promotion of health in the workplace.

It is hoped that this research study will spur both governments and organizations to action.

Chapter 3
Methodology

The methodology chapter is divided into four parts. Information on the sample is presented first. This is followed in Section 2 by a description of how key constructs, such as perceived health and work–life conflict, were operationalized in this study. A brief discussion of the statistical techniques used in the analysis is found in Section 3. The last section outlines the reporting protocols followed throughout the report.

3.1 Who Responded to the "National Study on Balancing Work, Family and Lifestyle?"

The sample for the "National Study on Balancing Work, Family and Lifestyle" was drawn from 100 Canadian companies with 500+ employees. Forty of these organizations operated in the private sector, 22 were from the public sector and 38 were from the not-for-profit (NFP) sector. Private sector companies from the following sectors were included in the sample: telecommunications, high technology, retail, transportation, pharmaceutical, financial services, entertainment, natural resources and manufacturing. The public sector sample included 7 municipal governments, 7 provincial government departments, and 8 federal government departments/ agencies. The NFP sector sample consisted of 15 hospitals/district health councils, 10 school boards, 8 universities and colleges, and 5 "other" organizations that could best be classified as NFP/greater public sector (e.g. social service, charity, protective services).

A total of 31,571 people responded to the survey. The sample is distributed as follows:

- Just under half (46%) of the respondents work in the public sector. One in three works in the NFP sector and 20% are employed by a private sector company.
- Just over half (55%) of the respondents are women.
- Just under half (46%) work in managerial and professional positions, 40% work in non-professional positions (e.g. clerical, administrative, retail, production) and 14% work in technical jobs.
- Just over half (56%) of the respondents have dependent care responsibilities (i.e. spend an hour or more a week in either child care or elder care). The rest (44%) do not.

A full description of the sample can be found in Higgins and Duxbury (2002). Details on work–life conflict and other outcome data can be found in Duxbury and Higgins (2003). A summary of key findings of relevance to the readers of this report is given below.

Demographic Profile of Respondents

The 2001 study sample is well distributed with respect to age, region, community size, job type, education, personal income, family income, and family's financial well-being. In many ways, the demographic characteristics of the sample correspond to national data, suggesting that the results from this research can be generalized beyond this study. Approximately half of the respondents to the survey can be considered to be highly educated male and female knowledge workers. The majority of respondents are part of a dual-income family and indicate that they are able to "live comfortably" (but not luxuriously) on two full-time incomes. Respondents who belong to a traditional, male breadwinner family are in the minority (5% of total sample, 11% of the sample of men) and outnumbered by respondents who are single parents. The fact that the traditional families tended to be headed by highly paid male managers and professionals suggests that this family arrangement is restricted to those with higher incomes.

The mean age of the respondents to this survey is 42.8 years which puts them in the mid-career/fast-track stage of the career cycle, the "full-nest" stage of the life cycle and the 40's transition stage of adult development. Each of these stages is associated with increased stress and greater work and family demands. Three quarters of the respondents to this survey are presently married or living with a significant other and 69% are part of a dual-income family. Eleven percent of the respondents are single parents. Twelve percent of the sample live in rural areas. One in three is a clerical or administrative employee with a lower level of formal education (i.e. reduced job mobility) and lower personal and family incomes. One quarter of the respondents indicated that money is tight in their family; 29% of respondents earn less than $40,000 per year and just over one quarter live in families with total family

incomes that are less than the Canadian average. One in three of the respondents has a high school education or less.

Sample Profile: Levels of Work–Life Conflict

In this report, we focus on four different types of work–life conflict: role overload, work to family interference, family to work interference and caregiver strain.

Role overload is having too much to do in a given amount of time. This form of work–life conflict occurs when the total demands on time and energy associated with the prescribed activities of multiple roles are too great to perform the roles adequately or comfortably. The majority of employees in our sample (58%) are currently experiencing high levels of role overload. Another 30% report moderate levels of role overload. Only 12% of the respondents in this sample report low levels of overload.

Work to family interference occurs when work demands and responsibilities make it more difficult for an employee to fulfil family role responsibilities. One in four of the Canadians in this sample reports that his or her work responsibilities interfere with the ability to fulfil responsibilities at home. Almost 40% of the respondents report moderate levels of interference. The proportion of the Canadian workforce with high levels of work to family interference has not changed substantially over the past decade.

Family to work interference occurs when family demands and responsibilities make it more difficult for an employee to fulfil work role responsibilities. Only 10% of the Canadians in this sample reported high levels of family to work interference. Another third reported moderate levels of family to work interference. The percentage of working Canadians who give priority to family rather than work has doubled over the past decade.

Caregiver strain is defined as physical, financial or mental stress associated with providing care or assistance to a disabled or elderly dependent. Approximately one in four of the individuals in this sample experiences what can be considered to be high levels of caregiver strain.[16] The rest of the respondents to this survey (74%) rarely experience caregiver strain.

Who, in this sample, has more problems balancing work and family responsibilities? The evidence is quite clear—employed Canadians with dependent care responsibilities (i.e. child care, elder care or both). Employees who have child and/or elder care responsibilities report higher levels of work–life conflict than those without such responsibilities regardless of how work–life conflict was assessed. The finding that employees without dependent care responsibilities are more able to balance work with life can be attributed to two factors: fewer demands outside of work and more degrees of freedom to deal with work issues (e.g. more control over their time).

Job type is associated with all but one of the measures of work–life conflict examined in this study. Employees with higher demands at work (i.e. managers and professionals) are more likely than those in "other" jobs to experience high levels of overload and work to family interference. Those in "other" jobs, on the other hand, are more likely to report higher levels of caregiver strain due to the financial stresses associated with elder care.

Women are more likely than men to report high levels of role overload and high caregiver strain. This is consistent with the fact that the women in this sample devote more hours per week than men to non-work activities such as child care and elder care and are more likely to have primary responsibility for non-work tasks.

3.2 Measurement of Key Constructs

A 12-page survey produced in a mark-sensitive format with a unique bar code given to each organization participating in the study was used to collect the data. This survey was divided into nine sections: your job; your manager; time management; work, family and personal life; work arrangements; work environment; family; physical and mental health; and "information about you." Virtually all of the scales used in the questionnaire are psychometrically sound measures that have been well validated in other studies.

One major objective of this research was to attempt to put some kind of dollar value on work–life conflict. To do this we developed, for the purposes of this study, a number of questions focusing on the respondents' use of Canada's health care system, and their use of prescription medicine. These measures were modelled on the questions developed by Moos et al. (1988) for use in the Health and Daily Living Form. Information on the constructs used in this analysis is given below and in Boxes 3 (definition of work–life conflict), 4 (measurement of work–life conflict) and 5 (health and health care outcomes).

16 Nine percent find elder care to be a strain several times a week or daily. Another 17% experience such feelings approximately once a week.

Box 3

Defining Work–Life Conflict

Work–life conflict is conceptualized broadly in this study to include role overload, work to family interference, family to work interference and caregiver strain. The working definition of each of these constructs is given below.

Role overload is having too much to do in a given amount of time. This form of work–life conflict occurs when the total demands on time and energy associated with the prescribed activities of multiple roles are too great to perform the roles adequately or comfortably.

Role interference occurs when incompatible demands make it difficult, if not impossible, for an employee to perform all roles well. Role interference is conceptualized as having two distinct facets:

- **Work to family interference**: This type of role interference occurs when work demands and responsibilities make it more difficult to fulfil family role responsibilities.
- **Family to work interference**: This type of role interference occurs when family demands and responsibilities make it more difficult to fulfil work role responsibilities.

Caregiver strain: Caregiver strain is an outcome which may arise due to responsibility for the care of an elderly or disabled dependent. Caregiver strain is a multidimensional construct which is defined in terms of "burdens" or changes in the caregivers' day-to-day lives which can be attributed to the need to provide care (Robinson, 1983). Four types of caregiver strains resulting from stress have been identified: emotional strain (i.e. depression, anxiety, emotional exhaustion), physical strain, financial strain, and family strain. It should be noted that research on caregiver strain has typically focused on strains associated with the provision of elder care or care for a disabled dependent rather than those linked to child care.

Box 4

Measurement of Work–Life Conflict

Role overload was assessed in this study using five items from a scale developed by Bohen and Viveros-Long (1981). Role overload was calculated as the summed average of these five items. High scores indicate greater role overload. In this study, Cronbach's alpha for this scale was 0.88.

Work to family interference was measured by means of a 5-item Likert scale developed by Gutek, Searle and Kelpa (1991). Work to family interference was calculated as the summed average of these five items. High scores indicate higher levels of perceived interference. In this study, Cronbach's alpha for this scale was 0.92.

Family to work interference was assessed by means of a 5-item Likert scale developed by Gutek, Searle and Kelpa (1991). Family to work interference was calculated as the summed average of these five items. High scores indicate higher levels of perceived interference. In this study, Cronbach's alpha for this scale was 0.87.

Caregiver strain was quantified using a modified three-item version of Robinson's (1983) Caregiver Strain Index (CSI) (family strain, a key family outcome, was assessed separately). This index measures objective (rather than subjective) burden in four areas. Respondents were asked to indicate (using a 5-point Likert scale) how often they had difficulty in caring for an elderly or disabled relative or dependent because of physical strains, financial strains or because it left them feeling completely overwhelmed. Options given included never, monthly, weekly, several days per week or daily. Total caregiver strain was calculated as the summed average of these three items. Higher scores indicate greater strain. This measure has been used in a number of studies with good results (Robinson reports a Cronbach alpha of 0.91). In this study, the Cronbach alpha was 0.78.

Box 5

Measurement of Health Outcomes

Perceived health was measured by asking respondents the following: "Compared to other people your age, how would you describe your usual state of health?" A 5-point Likert scale with the following anchors were used for the responses: 1 = poor, 2 = fair, 3 = good, 4 = very good and 5 = excellent. This measure of health status has been found by Statistics Canada (1999) to be a good predictor of the presence of more "objectively" measured health problems as well as health care utilization and longevity.

Use of Canada's health care system by Canadian employees was estimated by asking respondents to indicate (yes or no) whether or not in the past six months they had:

- seen a physician other than for a regular check-up or maternity-related visit?
- sought care from another medical/health professional (e.g. physiotherapist, chiropractor)?

- sought care from a mental health professional (e.g. psychologist, psychiatrist, counsellor)?
- spent any time (measured in days) in the hospital (excluding visits to the emergency department or outpatient visits)?
- personally needed to seek medical care at a hospital's emergency department (excluding visits to the emergency department on behalf of other members of their family)?
- visited a hospital or medical clinic on an outpatient (or day-use) basis for medical tests or procedures (e.g. ultrasound, EKG, day surgery)?

Respondents who indicated that they had used any of the above services were then asked to record either the number of visits they had made (or, in the case of hospital use, the number of days they had spent in hospital) in the six-month period. These measures are used two ways in this study: (1) as an indicator of demands on various facets of the health care system, and (2) as indicators (albeit crude) of an employee's physical and mental health.

The first question in this series (visits to the physician) was developed by Moos, Cronkite, Billings and Finney (1988) for use in the Health and Daily Living Form. Previous studies have determined that this measure is a good proxy for actual health status and accurately reflects actual physician visits. Accordingly, the other measures of use were designed using the same format.

Use of prescription medicine: The perceived use of prescription medicine was also collected in this study. Respondents were asked if in the past six months they had purchased prescription medicine for their own personal use (yes/no response). Those who answered yes were asked to indicate approximately how much they had spent on prescription medicine in the last six months. They were given the following choices: $0, under $50, $50 to $99, $100 to $149, $150 to $199, $200 to $299, $300 to $399 and $400 or more. They were also asked to indicate who paid for the prescription medicine that they had purchased for their own personal use. Responses ranged from respondent pays 100% to company pays 100%. This measure was developed for this study.

3.2.1 Health and health care outcomes

The following health and health care outcomes were included in this study: perceived health, use of Canada's health care system, and perceived use of prescription medicine. Details on each of these measures are given below and in Box 5.

Perceived Health

Measures of health status may be subjective (e.g. self-rated health status) or objective such as instrumented measures of blood pressure. They may describe health directly (e.g. incidence of cancer) or indirectly (e.g. health care utilization is a proxy for the existence of a health problem) (Statistics Canada, 1999). The measure of self-rated health status used in this study (see Box 5) was developed by Statistics Canada and summarizes physical and mental health as experienced by the individual according to his or her values (Statistics Canada, 1999, p. 217). This measure of health status has been found by Statistics Canada (1999) to be a good predictor of the presence of more "objectively" measured health problems, as well as health care utilization and longevity.

Use of Canada's health care system: This study examines the extent to which Canadian employees use six facets of Canada's health care system: physicians, other health care professionals, mental health professionals, hospitals (both emergency wards and overnight stays) and outpatient clinics. While the use of health services is a less satisfactory indicator of health status than physical health measures, such as blood pressure or cholesterol, it is a useful measure of health (Statistics Canada, 1999). Furthermore, information on the use of physicians, other health care professionals and hospital services can indicate emerging trends that may have an impact on health care budgets (Statistics Canada, 1999) and allows us to estimate how much high work–life conflict costs Canadian society in terms of demands on the health care system.

Prescription drug use: Prescription drug use and its associated costs are escalating in Canada (Statistics Canada, 1999). It has been estimated, for example, that Canadians spent over $15.5 billion on drugs in 2001—an increase of 8.6% over the previous year. Why is spending on drugs rising? Reasons cited in the literature include a decline in the health of Canadians, a trend toward drug therapy (rather than surgery), the emergence of new diseases for which drugs are the treatment of choice, and the development of new drugs to treat old diseases (CIHI, 2002). In Canada, both the public and private sectors pay part of the drug bill and many companies are concerned with the increase they are experiencing in their benefits costs as employees purchase more prescription medicine. This measure will be used in two ways in this study: as a surrogate indicator of health status (higher prescription drug expenditures are assumed to reflect poorer health) and to further assess the impact of high work–life conflict on the bottom line.

3.3 Data Analysis

The following types of analysis were undertaken to meet the research objectives outlined above:

- **Perceived health**: These data are reported in two ways in this report: mean level of perceived health and the frequency with which:
  - respondents indicated their health was poor or fair (responses of 1 or 2 were combined into one group which was given the label "Fair/Poor"),
  - respondents indicated their health was excellent or very good (responses of 4 or 5 were combined into one group which was labelled "Excellent/Very Good"), and
  - respondents indicated that their health was good (response of 3).
- **Use of health services**: One of the key objectives of this study was to use our sample to estimate the extent to which Canadian employees were using various facets of the health care system. Two aspects of use will be examined in this study: likelihood of use (i.e. the percent of the sample who did and did not use the service) and the mean amount the service was used. This second statistic is reported in two different ways:
  - the mean (X) visits (or mean days in the case of hospital stays) per six-month time period for the total sample (referred to in Appendix B as X Visits: Total Sample), and
  - the mean (X) visits (or mean days in the case of hospital stays) per six-month time period for the sub-sample that used the service (referred to in Appendix B as X Visits: Users).
- **Use of prescription medicine**: After examination of the distribution of the responses, this variable was collapsed into three groups as follows: those who had spent nothing, those who had spent $1 to $150 and those who had spent more than $150 on prescription medicine in the six months prior to the survey being conducted. Frequencies were then calculated for the collapsed variable.
- **The impact of work–life conflict**: A second objective of this research was to look at the impact of high work–life conflict on perceived health, use of Canada's health care system and prescription drug use. The procedures used to examine the impact of work–life conflict on each of these health outcomes are shown in Box 6.
- **Examination of the impact of gender, job type, dependent care status and sector of employment on health outcomes**: Research done in this area suggests that gender, job type, dependent care status and sector of employment might all influence the outcomes (i.e. work–life conflict, perceived health, use of the health care system) included in this study.[17] The procedure used to examine between-group differences in health outcomes can be found in Box 7.
- **Relative risk** is a way to measure strength of association between two constructs. The higher the relative risk, the stronger the association (CIHI, 2003). For example, researchers have determined that the relative risk of developing lung cancer in smokers versus non-smokers is approximately 3.0 (CIHI, 2003), meaning that smokers are 3.0 times more likely to develop lung cancer than non-smokers. Relative risk is calculated in this report by dividing the percent of the sample with high work–life conflict who report a particular outcome by the percent of the sample with low work–life conflict who report this outcome (or vice versa depending on the item).

Box 6

Methodology Used to Examine the Impact of Work–Life Conflict

This report looks at the impact of high work–life conflict on perceived health, prescription drug use and use of Canada's health care system (the measures used to quantify each of these outcomes are shown in Box 5). The procedure for this analysis can be summarized as follows:

1. Population norms were used to divide the sample into three groups: those who had high, moderate and low work–life conflict scores (see Duxbury and Higgins, 1998 for a discussion of this procedure).
2. Responses given to the items quantifying perceived health, prescription drug use and use of Canada's health care system were used to divide the sample into groups as follows:
   - Perceived health: excellent/very good, good, fair/poor
   - Use of health care system: use/no use of this type of service
   - Prescription drug use: spent $0 in a six-month period, spent $1 to $150 on prescription medicine in a six-month period, and spent

17 A summary of this literature can be found in Higgins & Duxbury (2002).

$150 or more on prescription medicine in a six-month period.

3. Chi-square analysis was used to test for significance among groups. In the case of perceived health and prescription drug use, the chi-square was a three by three analysis: high, medium and low work–life conflict versus high, moderate and low prescription drug use. With the dichotomous variables (i.e. yes, no), the analysis was a three by two chi-square. Only part of these analyses is shown in the report (i.e. we show the proportion with high and low scores on the construct of interest but not the proportion with a moderate score). Given the large sample sizes, almost all differences were significant. To ensure that differences were substantive (i.e. worthy of note) as well as significant, we focus here on variations that are significant at the $p < 0.0001$ level.

Box 7

Methodology Used to Examine the Impact of Gender, Job Type, Dependent Care Status and Sector of Employment

This paper examines how key contextual factors affect work–life conflict. It also explores the association between these contextual factors and the attitudes and outcomes under study. The contextual factors were operationalized as follows:

- **Gender**: male versus female
- **Job type**: managers and professionals versus clerical, administrative, technical and production positions (referred to as "other" in this report)
- **Dependent care**: employees who spend one or more hours per week in child care and/or elder care versus employees who spend no time in these types of activities
- **Sector of employment**: public sector versus private sector versus not-for-profit (NFP) sector

This research series takes a fairly unique approach to the analysis of gender impacts on work–life conflict by examining gender differences within job type, dependent care status and sector of employment. Such an analysis recognizes that Canadian men and women have different realities and that it may be these realities, rather than gender itself, that have an impact on the attitudes and outcomes being examined in this analysis. This type of analysis should be invaluable to policy makers who need to know if supports and interventions should be targeted to a particular group (e.g. women, parents) or an environmental condition (e.g. low-control jobs). Two different statistical tests were used to determine if the differences were statistically significant. Crosstab procedures were used when the data were reported as a frequency (i.e. % using a service) to determine if the effect of job type, employment sector and dependent care status on the outcome of interest was the same for men and women. In those cases where we report a mean (i.e. number of visits per six-month period), an F test was used to test for between-group differences. Where more than three groups were involved, Scheffe's follow-up tests were used to determine which groups were different from each other.

Finally, it should be noted that the cross-sectional nature of the data collected for this study means that the direction of causality between the various measures of work–life conflict examined in this research and the use of the health care system cannot be determined. Theoretically, most of the research done in this area supports our hypothesis that higher levels of work–life conflict contribute to poorer health and greater use of medical services. The authors do, however, acknowledge that it is possible that in some cases the direction of causality may be reversed (i.e. people who are sick and make greater use of the health care system are more likely to experience work–life conflict as a result of their health problem).

3.4 Reporting Protocols Followed in This Report

All of the differences discussed in the report meet two criteria: they are statistically significant and substantive (i.e. the differences matter in a practical sense). This second requirement was necessary as the large sample sizes meant that differences as small as 0.5% were often statistically significant. In interpreting the data, the reader should use the following rule of thumb: the greater the difference, the more important the finding.

The reader should also be aware that most numbers reported in the text have been rounded off to the nearest decimal or presented as whole numbers and thus may not add up to 100%.

In the survey, we asked respondents to use the six months prior to the study as their frame of reference when answering questions on use of the health care system, prescription drug use, etc. This time frame was selected as research in this area indicates that recall data become less reliable when people are asked to consider longer time frames. The data reported are therefore presented for the six-month period; however, the data used in the conclusion section and in the executive summary are presented as visits or use per year. These estimates were

obtained by multiplying the findings for a six-month period by two.

Finally, it should be noted that to make the text easier to follow, most of the source data have been put in Appendices at the end of the report. The data are grouped as follows:

- Appendix B: Perceived health, use of health care system, and prescription drug use by gender, job type, dependent care status and sector of employment.
- Appendix C: Impact of work–life conflict on perceived health, use of health care system, and prescription drug use.
- Appendix D: Relative risk of health outcomes associated with each form of work–life conflict.

Chapter 4

How Do Canadian Employees See Their Health?

This chapter addresses the following questions:

- How do Canadian employees view their physical health?
- What is the impact of gender, job type, dependent care status and sector of employment on perceived health?
- What is the link between work–life conflict and perceived health?

This chapter is divided into three parts. Data on the perceived health of Canadian employees are presented and discussed in Section 4.1. Included in this section is a discussion of how gender, job type, dependent care status and sector of employment are associated with perceived health. The link between perceived health and work–life conflict is made in Section 4.2. A summary of the key findings with regard to perceived health are given in the final section of the chapter, Section 4.3. The data discussed in this section of the report can be found in the appendices at the end of the report.

4.1 Perceived Health

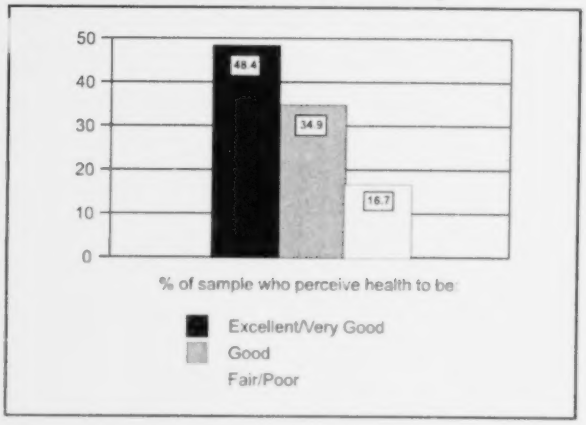
The vast majority of health status indicators are oriented to disease and death and, with the exception of measures such as the absence of disease or the postponement of death, there are only a limited number of statistics which deal with positive aspects of health (Statistics Canada, 1999). The self-related measure of health status used in this study permits some assessment of positive health as more than just the absence of health problems. According to this metric, how healthy are Canadians? In 1996-97, one in four Canadians described his or her health as excellent[18] while another 38% rated it as very good (Statistics Canada, 1999). Only 9% of Canadians described their health as fair or poor (Statistics Canada, 1999).

Who are more likely to say they are healthy? According to CIHI (2002), perceived health status is positively associated with socio-economic status (e.g. younger, more highly educated individuals with higher incomes are more likely to report they are healthy). In a similar vein, Statistics Canada (1999) reports that:

- males are more likely than females to rate their health status as excellent (these gender differences in perceived health are, however, generally confined to younger age groups); and
- there is a definite gradient in self-rated health that corresponds to one's level of income adequacy (i.e. 18% of Canadians in the two lowest income groups rate their health as excellent compared with 33% of Canadians with the highest levels of income; 21% of low-income Canadians state that their health is fair or poor compared with only 5% of Canadians with the highest incomes).

Perceived health data for the total sample are shown in Figure 2.

Figure 2
Perceived Health for Total Sample



Half of the employees in this sample say their health is very good to excellent

Almost half of the respondents to this survey (48.4%) indicated that their health was very good or excellent.[19] This is a significantly lower proportion than reported by

18 The proportion of Canadians defining their health as "excellent" has not changed since 1985 (Statistics Canada, 1999).

19 Note: The mean level of perceived health for this sample is 3.44 (good to very good) with a standard deviation of 0.99.

Statistics Canada for Canadians aged 12 or older (61% reported health was very good or excellent). While some of this difference might be explained by the age differences in the sample (younger Canadians can be expected to enjoy better health than older Canadians), it is also likely that working conditions and job-related stress are taking their toll on Canadian employees' health status.

Almost one in five employees perceives that his or her health is fair or poor

At the other end of the spectrum are the 16.7% of employees who perceive their health to be fair or poor. This is a higher proportion with poor health than reported by Statistics Canada for a sample which included Canadians aged 12 or older and supports the idea that employment conditions may be having a negative impact on the health of some Canadians. These numbers are also a wake-up call for employers as they support a link between employee health and the organization's bottom line.[20]

Managers and professionals are more likely than those in "other" positions to perceive they are in very good/excellent health

Perceived health is strongly associated with job type. Respondents in managerial and professional positions, regardless of their gender, were more likely than their counterparts in "other" jobs to describe their health as being very good or excellent. Respondents in "other" positions, on the other hand, were more likely to describe their health as fair or poor. Consider the following:

- 51% of male managers and 52% of female managers described their health as very good/excellent as compared to 45% of males and 46% of females in "other" positions, and
- 15% of male and female managers described their health as fair/poor compared to 19% of male and female respondents in "other" positions.

These findings are consistent with those reported by Statistics Canada and the Whitehall research group (Hemingway et al., 1997; Marmot and Davey, 1997) and support the strong positive association between socio-economic status and "good" health.

Employees without dependent care responsibilities are more likely to perceive they are in good health

Having dependent care responsibilities (i.e. children at home and/or elder care) is negatively associated with perceived health for both men and women. Employees without dependent care responsibilities, regardless of gender, were more likely than those with dependent care responsibilities to rate their health as very good or excellent. Those with child and/or elder care responsibilities were more likely than those without dependent care responsibilities to say their health was good or fair/poor. These differences are most obvious when one compares the mean perceived health scores for the four groups. Men and women without dependent care responsibilities reported a mean perceived health score of 3.5 compared to 3.4 for men and women with dependent care responsibilities. This suggests that combining work and family responsibilities takes its toll on the health of employed men and women.

Employees who work in the public sector are less likely to perceive they are in good health

Men and women who work in the public sector are more likely than those in other sectors to describe their health as fair or poor. One needs to look at the demographic differences between the samples to explain this finding (see Higgins & Duxbury [2002]). Private sector employees are younger than their counterparts in the public and NFP sectors. Employees in the NFP sector (especially the women) are more highly paid than their counterparts in either the public or the private sector. This would suggest that some of the sectoral differences in perceived health can be attributed to either age or socio-economic status. Nevertheless, these data intimate a link between poorer health and working conditions within the sector. Further examination of this link is warranted.

No gender differences in perceived health

Once job type and dependent care status are taken into account, there were no differences in perceived health that could be associated with gender. This is a very important finding as it runs counter to much of what has been reported in the literature (e.g. women make more use of

20 Analysis of the data (not shown in this report) shows a strong positive correlation between the perception that one's health is fair/poor, total absenteeism and prescription drug use.

health services than men and report poorer health, albeit only at younger ages). This would suggest that it is life circumstances (e.g. being compressed into lower level jobs within organizations, lower levels of perceived control) rather than gender itself which is associated with the lower levels of perceived health. The finding that dependent care responsibilities (i.e. parenthood, elder care responsibilities) appear to impair the health of both men and women is also worthy of note. These data are consistent with our findings that gender differences in the time spent in child and elder care have disappeared over the past decade as women do less at home than in the past and men do more.[21] These findings suggest that it is the challenges of combining work with parenting/caregiving that impair health—not being a working mother.

4.2 Impact of Work–Life Conflict on Perceived Health

As was established in the second report in this series, work–life conflict in its various forms is a problem for many Canadian employees. Just under 60% of the respondents to the 2001 survey reported high levels of role overload; 28% reported high work to family interference; 10% reported high family to work interference while another 32% reported moderate levels of interference, and just under one in four experienced what can be considered to be high levels of caregiver strain. In this section, we examine what impact each of these forms of work–life conflict has on perceived health. The data discussed in this section are shown graphically in Figure 3 and can be found in Appendices C and D.

High conflict between work and life impairs health

High work–life conflict is associated with lower levels of perceived health, regardless of how we conceptualize work–life conflict. Similarly, employees who are more able to balance competing work and non-work demands feel that they are in better health than those who cannot.

Relative risk of poorer health is highest for role overload

What impact does work–life conflict have on perceived health? Consider the following:

- employees with high role overload are 2.9 times more likely to say their health is fair/poor than employees with low role overload,
- employees with high work to family interference are 2.4 times more likely to say their health is fair/poor than employees with low work to family interference,

Figure 3
Impact of Work–Life Conflict on Perceived Health
(a) Percent who say health is very good/excellent

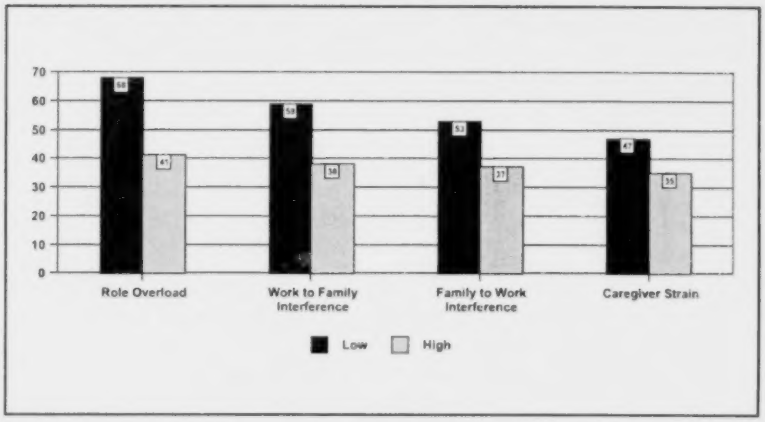
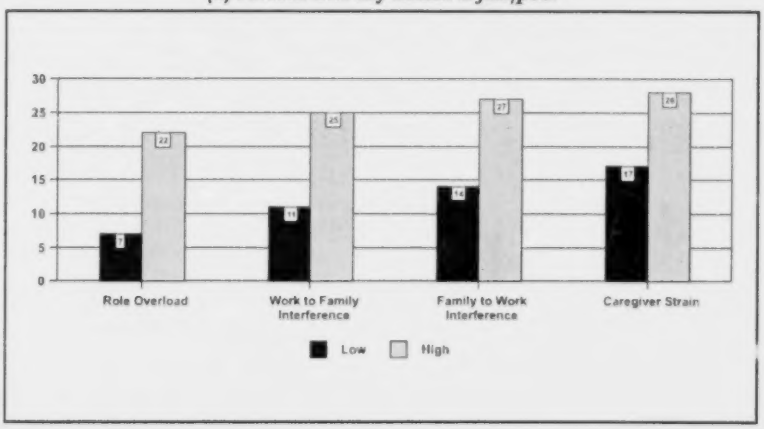


Figure 3
Impact of Work–Life Conflict on Perceived Health
(b) Percent who say health is fair/poor



21 A full discussion of this phenomenon is found in Higgins and Duxbury (2002).

- employees with high family to work interference are almost twice as likely to say their health is fair/poor than employees with low family to work interference, and
- employees with high caregiver strain are 1.7 times more likely to say their health is fair/poor than employees with low caregiver strain.

In other words, employees with high levels of conflict are substantially more likely to report that their health is fair/poor. Assuming that this is an accurate portrayal of their actual health status (an assumption that Statistics Canada assures us is a sound one), we can expect that this group of employees will be more likely to use prescription drugs, take advantage of their employer's benefit plan, be absent from work, and seek help from Canada's health care system. In other words, high levels of work–life conflict are likely to have a negative impact on employers' bottom lines and increase demands on Canada's health care system.

It is also worthwhile looking at the other side of the coin. If we could lower work–life conflict, what would happen to the health of Canadian employees. The data indicate that it would improve substantially. For example:

- employees with low role overload are 1.6 times more likely to say their health is very good/excellent than employees with high role overload,
- employees with low work to family interference are 1.5 times more likely to say their health is very good/excellent than employees with high work to family interference,
- employees with low family to work interference are 1.4 times as likely to say their health is very good/excellent than employees with high family to work interference, and
- employees with low caregiver strain are 1.3 times more likely to say their health is very good/excellent than employees with high caregiver strain.

In other words, if we can make it easier to help people balance work and life we can measurably improve the health of Canadian employees.

4.3 Summary: Perceived Health

While approximately half (48%) of the employees who answered the survey indicated that their health was very good or excellent, almost one in five (17%) described his or her health as fair or poor. Managers and professionals and employees without child care or elder care responsibilities were more likely to enjoy good health. Employees in "other" positions, public sector employees, employed parents and employees with elder care responsibilities, on the other hand, were more likely to perceive their health as fair or poor. These findings are consistent with those reported by Statistics Canada and support the strong positive association between socio-economic status, higher levels of perceived control and good health.

Once job type and dependent care status were taken into account, there were no differences in perceived health that could be associated with gender. This is a very important finding as it runs counter to much of what has been reported in the literature (e.g. women make more use of the health care system). This would suggest that it is life circumstances (e.g. being compressed into lower level jobs within organizations, lower levels of perceived control) rather than gender itself which is associated with ill health. The finding that dependent care responsibilities (i.e. parenthood, elder care responsibilities) appear to impair the health of both men and women is also worthy of note as it suggests that it is difficulties in combining parenting, caregiving and work that impair health—not being a working mother.

Work–life conflict in its various forms is a problem for many Canadian employees. The data reviewed in this report support the following conclusion: high work–life conflict is associated with lower levels of perceived health for working Canadians, regardless of how we conceptualize work–life conflict. Employees who are more able to balance competing work and non-work demands feel that they are in better health than those who cannot.

The data suggest that employers and governments who wish to improve the health of their workforce need to pay particular attention to two aspects of work–life conflict: role overload and work to family interference. Both

measures are strongly associated with heavy work demands, longer hours at work, high amounts of unpaid overtime, greater amounts of work-related travel and a culture of face time (i.e. emphasis is on "presenteeism" as opposed to outputs and deliverables). They also present higher levels of relative risk with poorer physical health. Perhaps most importantly, however, is that these are the two most prevalent forms of work–life conflict and as such pose the most problems in terms of absolute risk[22] as well as relative risk.

Finally, these numbers offer a wake-up call to employers and governments for several reasons. First, they suggest that a substantive proportion of their workforce (almost one in five) is more likely to engage in behaviours (e.g. work) that can negatively impact the bottom line. This may affect Canada's ability to compete globally. Second, they indicate that combining work and family responsibilities takes its toll on the health of employed Canadians, regardless of their gender (i.e. this is no longer a women's issue). Finally, these findings support the population health model which links lower socio-economic status and ill health, and suggest that workplace health efforts and interventions such as paid personal leave and health promotion activities need to be targeted to this level of the organization.

purchasing prescription medicine, being absent from

22 An understanding of the idea of absolute risk is also important to this discussion. Absolute risk takes the prevalence of the risk factor into account when selecting an intervention. Generally, cutting the risk of a very rare adverse event in half will likely have less of an effect on the outcome of interest than a smaller drop in the risk of a common event (CIHI, 2003).

Chapter 5

How Does Work–Life Conflict Affect the Use of Canada's Health Care System?

The following research questions are addressed in this chapter of the report:

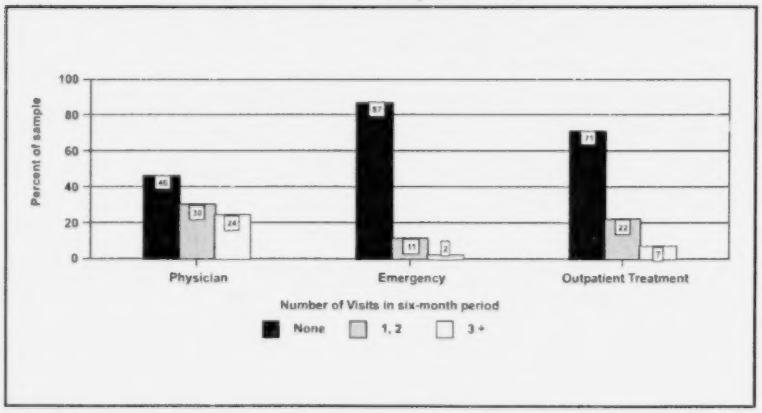
- To what extent are Canadian employees making use of the various facets of Canada's health care system?
- What is the impact of gender, job type, sector of employment and dependent care status on the use of Canada's health care system?
- How does work–life conflict (operationalized to include role overload, work to family interference, family to work interference and caregiver strain) affect the use of Canada's health care system?

The data discussed in this chapter of the report can be found in the appendices at the end of the report. They are also shown graphically in Figure 4.

This chapter is divided into eight parts. Data on Canadian employees' use of the health care system are addressed and discussed in Section 5.1 to Section 5.6. These six sections are grouped as follows: the first three sections (5.1 to 5.3) deal with visits to health care professionals (visits to the physician are discussed in Section 5.1 followed by visits to other types of health care professionals (5.2) and visits to mental health professionals (5.3). The next three sections (5.4 to 5.6) deal with the use of different types of facilities (inpatient care in hospital [5.4], visits to the emergency department [5.5], and outpatient care in clinics or hospitals [5.6]). Included in each of these sections is a discussion of how gender, job type, dependent care status and sector of employment are associated with each dimension of health care system use. The link between the use of the health care system and work–life conflict is made in Section 5.7 and a summary of the key findings with regard to use of the health care system is given in Section 5.8.

Figure 4
Percentage of Respondents Using Different Facets of the Health Care System

(a) Visits to Physician, Use of EmergencyDepartment, Medical Tests on Outpatient Basis



5.1 Visits to the Physician

The delivery of health care, even when broadly defined, is primarily the responsibility of the family physician (Statistics Canada, 1999). While many models of primary health care exist, physician-centred solo and small group practice is the norm in Canada, and most Canadians turn to their family doctor for both routine, ongoing care and immediate care for minor health problems (CIHI, 2003).

Almost every Canadian interfaces with our health care system. In 2001, more than 23 million Canadians aged 15 or older (i.e. 94% of the population) accessed at least one type of first-contact health services. The primary reasons for seeking care included routine or ongoing care, immediate care for a minor health problem and/or health information or advice (CIHI, 2003). Where Canadians turn first for care depends very much on when they need help. Family doctors' offices are the leading place for care during regular office hours while hospital emergency departments are the point of first entry when problems arise at night (CIHI, 2003).

Recent estimates (CIHI, 2002) show that in 2000-01, 78% of Canadians aged 12 or older indicated that they had consulted a family doctor at least once in the past year. Data in the Medical Care Database and the National Physician Database (based on claims submitted by the fee-for-service physicians to provincial medical programs) indicate

Figure 4
Percentage of Respondents Using Different Facets of the Health Care System

(b) Inpatient Hospital Stays, Visits to Mental Health Professionals

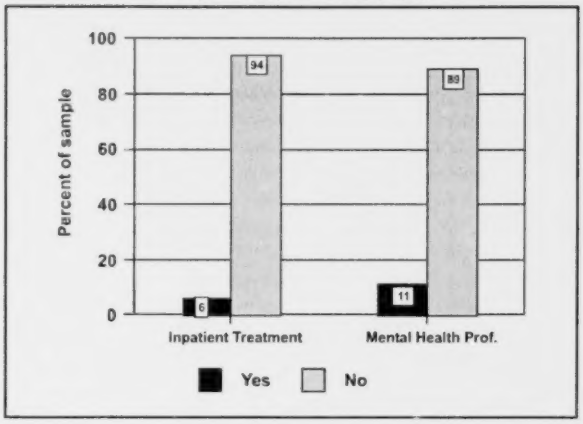
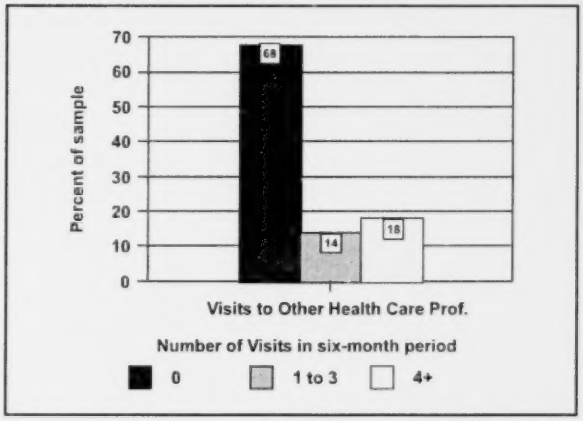


Figure 4
Percentage of Respondents Using Different Facets of the Health Care System

(c) Visits to Other Health Care Professionals



that the number of physician visits per insured Canadian have increased over time: from 4.5 per year in 1978-79 to 6.0 in 1993-94 (CIHI, 2003). Statistics Canada (1999) reports that in 1998 women between the ages of 18 and 54 were two to three times more likely than their male cohorts to have visited a physician.

Half of the employees in this sample saw their physician in the past six months[23]

Just over half (54%) of the respondents sought care from their physician in the six months prior to the survey being conducted. One in four of these individuals visited his or her physician three or more times during this time period. In the following discussion, these individuals are considered to be "heavy" users of physician services.

The mean number of visits per employee was 1.5 in a six-month period or approximately 3 visits per year. The mean number of visits made in a six-month period by those who sought care was 2.9.

Women are more likely than men to have visited the physician

Women were substantially more likely than men to have sought care from a physician in the six months prior to the study being done. They also made more visits in a six-month period. This finding is particularly worthy of note in that it could be observed regardless of job type, dependent care responsibilities or sector of employment. Since there were no gender differences in perceived health and women were asked not to include maternity-related visits or check-ups in their total, it is hard to determine exactly what this finding reflects. Three explanations are plausible:

- Women are more likely than men to seek care when they are not well (e.g. women are making appropriate use of physician services and men are not seeking treatment for illness),
- Women are more likely to see their physician for non-physical concerns (e.g. counselling), or
- Women are more likely to seek treatment for "female" health issues, such as menopause care, menstrual issues and breast screening.

This gender difference in physician visits is almost identical to that reported by Statistics Canada.

23 Note: the question on physician visits was phrased as follows "In the last six months, have you seen a physician other than for a regular check-up or a maternity-related visit? If yes, how many visits have you made?"

Women in "other" positions in the organization are more likely to visit the doctor

Women in clerical and administrative positions within the organization make the greatest use of physician services (58% of the respondents in this group had visited a physician in the six months prior to the study being done compared to 56% of females in managerial/professional positions, 51% of men in "other" positions, and 50% of male managers and professionals).

The trends observed with respect to mean (X) number of visits to the physician are almost identical to those reported with respect to likelihood of use. Females in "other" positions made significantly more visits on average in a six-month period (X of 1.74) than women in managerial and professional positions (X = 1.57), male managers and professionals (X = 1.33 visits) and men in "other" positions (X = 1.39).

It is interesting to note that, while job type is associated with physician visits for the women in the sample (females in "other" positions are more likely to visit the physician than female managers and professionals), no such difference was noticed for the men in the sample. There are several plausible explanations for this finding (see Appendix B). First, it may be that managerial and professional jobs offer a health advantage to women. Alternatively, it may be that clerical and administrative jobs (i.e. pink collar jobs) have a more deleterious impact on the health of women than blue collar jobs do on the health of men. Finally, it is also possible that women in clerical and administrative positions who make the most visits to the physician have long-standing health issues which reduce their ability to advance in the organization.

Visits to the doctor not associated with dependent care status

Surprisingly, when gender is taken into account, dependent care status is not associated with the use of physician services. This runs counter to the popular belief that employees with children have a greater exposure to illness (e.g. children are a source of contagion in the family) and suffer poorer health as a consequence.

While women with dependent care were more likely than any other group to visit the physician (57% visited the physician in the six months prior to the study being conducted; X of 1.7 visits in six-month period), their use is not substantially higher than that observed for women without dependent care (56% visited the physician in the six months prior to the study being conducted; X of 1.6 visits in a six-month period). Similar findings were observed with respect to the men in the sample (49% of the men without dependent care and 50% of the men with dependent care visited the physician in the six months prior to the study; both groups of men made an average of 1.3 visits during this time period).

Public sector employees are more likely to have seen a physician

When gender is taken into account, it can be seen that public sector employees are more likely to have visited a physician than their counterparts in the private and NFP sectors. They also made more visits within a six-month period than employees in the other sectors. This finding is consistent with the fact that this group of employees was more likely to rate their health as fair/poor. The differences cannot, however, be attributed to age differences within the sector as public sector respondents reported the same age profile as those in the NFP sector. Rather, it may be working conditions within the sector (e.g. lower control, fewer rewards) that are negatively impacting health. Alternatively, it may be that it is easier for public sector employees to take time off work for medical appointments.

Men in the private sector are less likely to visit a physician

Men in the private sector sample were less likely to go to a doctor than any other group in the sample. Only 43% of the men in the private sector sample saw a doctor in the six months prior to the study being done (vs. 52% of men in the public sector sample and 50% of men in the NFP sample). Employees in this group made an average of one visit to a doctor in a six-month period.

5.2 Visits to Other Health Care Professionals

Over the past few years, the use of alternative health care has apparently become much more accepted by the public (Statistics Canada, 1999). More Canadians are turning to homeopathy, chiropractory, herbal products and other healing practices in addition to or instead of orthodox medical treatment (CIHI, 2002). In 2000-01, 60% of Canadians aged 12 or older consulted a dentist/orthodontist, 38% saw an eye specialist, 28% consulted other medical doctors and 19% visited a chiropractor or other type of complementary/alternative health professional. Who is most likely to consult other health care professionals? The data suggest the following groups are more likely: individuals with higher incomes, more highly educated middle-aged women and individuals with chronic conditions (CIHI, 2002).

One in three respondents sought help from a health care professional other than a physician

One in three respondents sought medical care from a medical/health professional other than a physician. Just under one in five respondents could, in fact, be considered a heavy user of such care; these respondents made four or more visits in a six-month period. The average number of visits reported by people who sought care from other health care professionals is 5.0 in a six-month period; the average number of visits for the total sample is 1.5 in a six-month period. In other words, for this sample visits to other health care professionals were as frequent as physician visits. From the employer and the government's points of view, however, the use of these types of services has quite different consequences. Since the *Canada Health Act* does not specifically require the provinces and territories to insure non-physical medical services, such services are often not fully insured or are offered as restricted expenditures in private health plans. In other words, much of the cost of alternative health care services is paid for by employee benefit plans, whereas the costs associated with seeing a physician are borne by the government.

Women are more likely to seek care from other health care professionals

The tendency to seek care from other health care professionals is strongly associated with gender and sector of employment in the following manner:

- men in the private sector sample made less use of other health care professionals (less likely to seek care, fewer visits in a six-month time period) than other respondents, and
- women made more use of other health care professionals (more likely to seek care, more visits to other health care professionals in a six-month time period).

The gender differences are particular worthy of note in that they could be observed regardless of job type or dependent care status. These findings are identical to those noted with respect to visits to a physician and likely have the same underlying etiology.

5.3 Visits to Mental Health Professionals

In almost every Canadian community, family physicians play an important role in handling the mental health problems of their patients. The family physician is usually the first and may be the only contact with the medical system for people with mental health problems (CPA, 2000). The prevalence of mental health disorders in primary care settings is high and approximately one in three family practice patients has mental health problems (CPA, 2000).

It was difficult to get accurate Canadian data on the number of people seeking care from mental health professionals other than physicians. This difficulty can be attributed to the high number of potential sources of such care (e.g. counsellors, psychologists, employment assistance programs), the fact that this service is often not government-funded (e.g. insurance companies, employee benefits plans and individuals often pay for this service) and the fact that there is little cooperation between physicians and other health care professionals with respect to the collection of such data (CPA, 2000; Kates, 2002). Kates (2002) does, however, provide a useful reference point from a recent study done in Ontario which suggests that 35% of people with mental disorders are treated only by their family physicians, 40% are treated by mental health professionals and 25% receive care from both family physicians and mental health workers.

Data from this study relating to this topic are summarized below. It should be noted that we do not know what percent of the visits to a physician reported earlier were to seek care for mental health problems. We can, however, use our data on visits to a mental health professional to give us a conservative estimate[24] of the extent to which mental health issues are of concern to Canadian employees.

One in ten employees sought care from a mental health professional

Just over one in ten (10.6%) of the respondents in this sample sought help from a mental health professional in the six months prior to the study being conducted. These individuals made an average of 4.1 visits in a six-month period, suggesting that they required some form of ongoing care. For the total sample, an average of 0.45 visits were made to a mental health professional in a six-month period.

24 If the ratios reported in Ontario hold nationally (i.e. 65% of patients with mental health issues seek alternative care while 35% visit their physician only), our data probably underestimate the situation by about 35%.

Women are more likely to seek care from a mental health professional

Visits to a mental health professional are strongly associated with gender, with women making more use of this facet of the health care system than men. This finding is particular worthy of note in that it could be observed regardless of job type, dependent care responsibilities or sector of employment and is true with respect to both likelihood of use and number of visits. These findings are identical to those noted with respect to visits to a physician and visits to other health care professionals and likely have the same underlying etiology.

Job type not associated with mental health visits

When gender is taken into account, job type is not associated with visits to mental health professionals—an important finding because studies such as that done by the Whitehall group (e.g. Hemingway et al., 1997; Marmot and Davey, 1997) or Karasek and Theorell (1997) have talked about the stresses associated with working in clerical and administrative positions (i.e. high-demand/low-control jobs). The data from Report Two in this series (Duxbury & Higgins, 2003) would suggest that the disappearance in job type differences in these data can be attributed to the fact that the stresses and demands associated with being a manager/professional have increased over time while the amount of control such individuals wield has declined. There is no evidence that the stresses associated with pink and blue collar work have declined (i.e. that organizations have addressed the concerns of this group of employees).

Employed parents and elder caregivers more likely use services of mental health professionals

When gender is taken into account, employees with dependent care responsibilities were significantly more likely than their counterparts without such responsibilities to seek care from a mental health professional. In the six months prior to the study being conducted:

- 13% of mothers/female elder caregivers sought care compared to 11% of women without children/elder care responsiblities,
- 9% of fathers/male elder caregivers sought care compared to 7% of men without children/elder care responsibilites,
- mothers/female elder caregivers made an average of 0.5 visits to a mental health professional compared to 0.4 visits by women without children/elder care responsibilities,
- fathers/male elder caregivers made an average of 0.4 visits to a mental health professional compared to 0.3 visits by men without children/elder care responsibilities.

These data are very interesting as they indicate that combining work and caregiving responsibilities has a negative impact on the mental (rather than the physical) health of employees. This interpretation of the data is consistent with the fact that the employees in this sample with dependent care responsibilities reported higher levels of stress, burnout and depressed mood than their counterparts without dependent care responsibilities (see Duxbury & Higgins, 2003). It is also consistent with the fact that employees with dependent care responsibilities do not make significantly more use of any other dimension of health care looked at in this study, although they are more likely to rate their health as fair/poor. When these results are looked at through the lens of two of the most common workplace health models (Karesek and Theorell's [1990] Job Strain Model and Siegrist's [1996] High Effort/Low Reward Model), it seems appropriate to label the job of employed parent/elder caregiver as either high demand/low control and/or high effort/low reward. This classification would allow researchers to apply the vast research literature in these areas to the field of work–life conflict.

Women in the public sector make most visits to mental health professionals

The relationship between gender, sector of employment and use of mental health care services is quite complex but consistent with the patterns observed with respect to use of physician services and visits to other health care professionals: men working in the private sector make less use of such services than any other group while women working in the public sector make more use. These findings are likely due to a complex of factors, including age, perceived control, socio-economic status, perceived rewards, etc. Exploring these relationships is beyond the scope of this study.

5.4 Visits to Hospital: Inpatient Care

Inpatient hospital care refers to care requiring admission to a hospital, including general and allied specialty hospitals (Statistics Canada, 1999). Diseases of the circulation system accounted for the most hospital days (18%). Mental disorders accounted for the next highest number—largely because employees with these sorts of problems had very extended hospital stays (31.7 days on average). Women account for more hospital stays than

men. Much of this difference can be attributed to women in the childbearing years (Statistics Canada, 1999).

Six percent of the employees in this sample were hospitalized in the past six months

In the six months prior to this study being conducted, 6 percent of the respondents in the sample required inpatient hospital care. This group of individuals spent an average of 2.3 nights in the hospital during this time period. The likelihood of requiring inpatient hospital care is not associated with gender, job type, dependent care status or sector of employment.

5.5 Visits to Hospital: Emergency Department

Emergency health services are generally described as medical services that are provided for health problems that require immediate care. This area of health services includes hospital emergency departments, urgent care centres and paramedical services (Statistics Canada, 1999). Wait time in hospital emergency rooms is often used as an indicator of health service delivery problems. Measuring wait times is a complex task (CIHI, 2003).[25]

In 1996-97, one in four Canadians (5.3 million) 12 years of age or older reported having used emergency health services at least once during the previous year (Statistics Canada, 1999). Overall, women were slightly more likely than men to use emergency health services (Statistics Canada, 1999).

Just over one in ten respondents sought care at a hospital emergency department

Just over one in ten of the employees in the sample (13%) sought medical care at a hospital emergency department for a personal health problem in the six months prior to this study being done (2% went to the emergency department 3 or more times). Respondents who sought care in an emergency department made an average of 1.6 visits in a six-month period. When the total sample is considered, employees made an average of 0.2 visits to emergency in a six-month period.

Visits to an emergency department were not associated with gender, dependent care or sector

Neither the likelihood of seeking care in an emergency department nor the number of visits made are substantively associated with gender, dependent care status or sector of employment.

Employees in "other" positions were more likely to visit an emergency department

Respondents in managerial and professional positions were substantively less likely to have sought care in an emergency department than their counterparts in "other" positions in the organization (15% of females and 14% of males in "other" positions visited the emergency department in the six months prior to the study being done vs. 11% of men and women in managerial and professional positions). There are several possible explanations as to why employees in "other" positions are more likely to use this form of health care. First, it may be that employees in this group are less likely to have a family practitioner and more likely to rely on emergency room physicians for medical problems and emergencies. This explanation of the data appears to apply to men in "other" positions in particular (i.e. they are more likely than their male counterparts in managerial and professional positions to say their health is fair/poor but no more likely to have visited a physician). Second, it may be that employees in "other" positions find it more difficult to get time off work to seek care from a physician. As noted above, employees who seek care outside of physician office hours typically go to the emergency department at the hospital. Finally, the fact that women in "other" positions are more likely than any other group of employees in this sample to say their health is fair/poor, to have visited a physician, and to have visited other health care professionals suggests that their higher number of visits to the emergency department also reflects the fact that this group of women is in poorer health.

5.6 Visits to Hospital/Clinic on an Outpatient Basis for Tests/Procedures

Hospital care is changing in Canada. Fewer people are being hospitalized overnight, but day surgery on an outpatient basis has increased (CIHI, 2002, 2003). Consider the following:

- The number of nights that Canadians spent in acute care hospitals fell by about 10% between 1995-96 and 2000-01. After taking population growth and the aging of the Canadian population into account, hospitalization rates fell by 16.5%.
- Canadians spent almost 21 million days as inpatients in acute care hospitals in 1999-2000—a decrease of 15.6% from 1994-95. During the

25 An excellent table outlining who is waiting for what and for how long can be found on p. 85 of this CIHI report.

same time period, the number who underwent day surgery increased by 18% in Ontario (CIHI, 2002).

Just under one in three employees sought care on an outpatient basis

Consistent with the national data reported above, substantively more of the employees in this sample received care on an outpatient basis (29.3% of the sample visited a hospital or clinic on an outpatient or day-use basis in the six months prior to the study being conducted) than stayed in hospital overnight (6%) or visited an emergency department (13%).

Women are more likely to receive treatment on an outpatient basis than men

The likelihood of receiving treatment on an outpatient basis is strongly associated with gender, with women being more likely to receive this type of care than men. This finding is particularly worthy of note in that it could be observed regardless of job type, dependent care responsibilities or sector of employment and is true with respect to both likelihood of use and number of visits. These findings are identical to those noted with respect to visits to a physician, use of other health care professionals and visits to mental health professionals and are likely to have the same underlying etiology.

Outpatient care is not associated with job type or dependent care status

Neither the likelihood of seeking care on an outpatient basis nor the number of outpatient visits made to a hospital or clinic are substantively associated with job type or dependent care status.

Female public sector employees are most likely to have received outpatient treatment; male private sector employees least likely

The relationship between gender, sector of employment and treatment on an outpatient basis is identical to the pattern observed for use of physician services, seeking care from another health care professional and visiting a mental health professional: men working in the private sector make less use of such services than any other group while women working in the public sector make more use than any other group.

5.7 Impact of Work–Life Conflict on Use of the Health Care System

As noted earlier in this report (Section 2.1), health care in Canada is a large, resource-intensive industry whose costs have been increasing dramatically over time. In 2002, Canada spent an estimated $122 billion (an average of $3,572 per person) on health care. Between 1997 and 2002, total health spending in Canada grew by almost $34 billion (an unprecedented rate of increase) and is at an all-time high, even after taking inflation and population growth into account (CIHI, 2003).

In Duxbury and Higgins (2003), we noted that between 1991 and 2001 (an overlapping time period) the proportion of employed Canadians experiencing high levels of work–life conflict has also increased.[26] This section of the report attempts to draw a link between these two sets of data by addressing the following question: Is work–life conflict associated with greater use of Canada's health care system?

This section is broken down into four parts, each associated with a different form of work–life conflict. Role overload is examined first (5.7.1) followed by work to family interference (5.7.2), family to work interference (5.7.3) and caregiver strain (5.7.4).

5.7.1 Impact of role overload on the use of Canada's health care system

Data linking role overload to use of the health care system are provided in Appendix C and shown graphically in Figure 5. Relative risk data are provided in Appendix D.

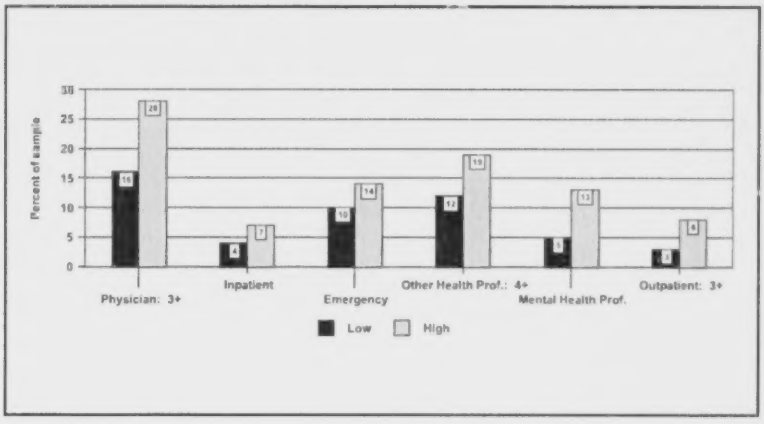
Overloaded employees make greater use of Canada's health care system—especially services linked to mental health care

Almost 60% of the employees in this sample have high levels of role overload. What implications does this have on health and the burdens placed on Canada's health care system? The findings from these data are unequivocal: employees with high levels of role overload made greater use of Canada's health care system than those with low levels of role overload. Consider the following. In the six months prior to the study being done, compared to their counterparts with low levels of role overload, employees with high levels of role overload were:

26 According to our data, the percentage of Canadians reporting high role overload incrased by 11% between 1991 and 2001, while the percentage reporting high levels offamily to work interference and caregiver strain doubled.

- 2.6 times more likely to have sought care from a mental health professional,
- 2.4 times more likely to have received care on an outpatient basis 3 or more times,
- 1.8 times more likely to have seen a physician 3 or more times,
- 1.6 times more likely to have sought care from another health care professional 4 or more times,
- 1.5 times more likely to have had to spend at least one night in the hospital, and
- 1.4 times more likely to have visited a hospital emergency room.

Figure 5
Impact of High Role Overload on Use of Canada's Health Care System



Key:

Physician: 3+	Saw physician 3 or more times inlast 6 months.
Other Health Prof.: 4+	Saw other health care professional 4 or more times in last 6 months.
Outpatient: 3+	Sought treatment on an outpatient basis 3 or more times in last 6 months.

Employees with lower levels of role overload were 1.3 times more likely not to have visited their physician in the past six months and made the lowest use of all of the dimensions of health care examined in this report (see Appendix C).

Taken together, these data would suggest that the health of Canadians (especially their mental health) would improve and use of Canada's health care system could be reduced if the number of employees experiencing high levels of role overload could be reduced. This would require both organizations and governments to address the issue of workloads and the use of office technology and to support employees with child care and elder care demands.

5.7.2 Impact of work to family interference on the use of Canada's health care system

Data linking work to family interference to the use of the health care system are provided in Appendix C and shown graphically in Figure 6. Relative risk data are provided in Appendix D.

Employees with work to family interference make greater use of Canada's health care system

Approximately one in three of the employees in this sample has high levels of work to family interference. These individuals make more use of Canada's health care system than their counterparts who do not experience such interference. The magnitude of the relationship between work to family interference and use of Canada's health care system can be determined by examining the following relative risk data. In the six months prior to the study being done, compared to their counterparts with low levels of work to family interference, employees with high levels of work to family interference were:

- 1.7 times more likely to have sought care from a mental health professional,
- 1.7 times more likely to have received care on an outpatient basis 3 or more times,
- 1.6 times more likely to have seen a physician 3 or more times,
- 1.5 times more likely to have visited a hospital emergency room,
- 1.4 times more likely to have had to spend at least one night in the hospital, and
- 1.3 times more likely to have sought care from another health care professional 4 or more times.

5.7.3 Impact of family to work interference on the use of Canada's health care system

Data linking family to work interference to the use of the health care system are provided in Appendix C and shown graphically in Figure 7. Relative risk data are provided in Appendix D.

Family to work interference can be linked to poorer mental health

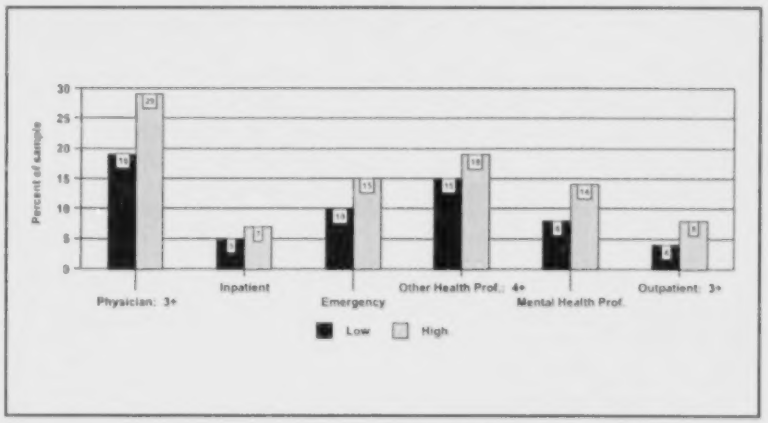
One in ten of the employees in this sample has high levels of family to work interference. While these individuals make more use of Canada's health care system than their counterparts who do not experience such interference, the magnitude of the relationship between this form of work–life conflict and the use of Canada's health care system is (with one exception) lower than observed for the other three forms of work–life conflict. Compared to their counterparts with low levels of family to work interference, employees with high levels of family to work interference were, in the six months prior to the study being done:

- 1.9 times more likely to have sought care from a mental health professional,
- 1.6 times more likely to have received care on an outpatient basis 3 or more times,
- 1.4 times more likely to have seen a physician 3 or more times,
- 1.3 times more likely to have visited a hospital emergency room, and
- 1.3 times more likely to have had to spend at least one night in the hospital.

One aspect of these data is worthy of note—the high association between family to work interference and the use of mental health care services (those with high levels of this form of interference are almost twice as likely to seek such care as those with low levels). What causes this association is hard to determine from these data as the direction of causality is not clear. We can speculate that putting family first in a society that materially and socially recognizes the opposite behaviour (i.e. putting work first) is associated with higher levels of stress and depression and lower self-esteem. This explanation assumes that family to work interference contributes to poorer mental health. Alternatively, it may be that family is more likely to rise in priority compared to work when there are problems at home, when demands associated with health care increase or when an individual is stressed or depressed (i.e. in poorer mental health). In this case, poorer mental health is assumed to lead to higher levels of family to work interference rather than the reverse. Future research should seek to determine the direction of causality of this relationship as it affects how the issue could best be addressed.

Figure 6
Impact of High Work to Family Interference on Use of Canada's Health Care

Percent of respondents with high and low levels of owrk to family interference who, in the last six months, made the following use of these facets of the health care system

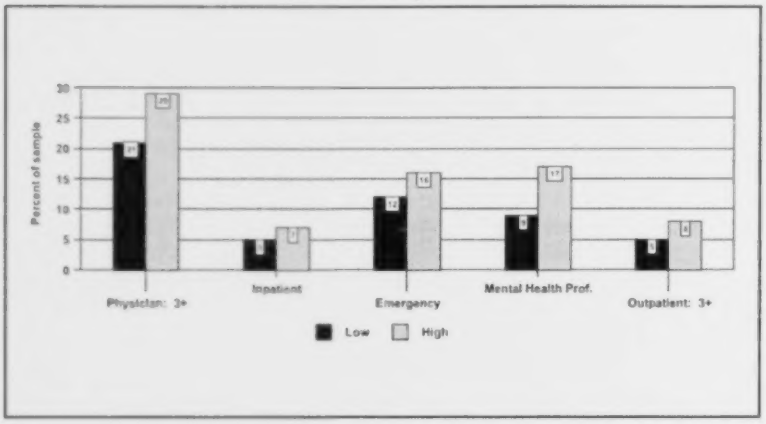


Key:

Physician: 3+	Saw physician 3 or more times inlast 6 months.
Other Health Prof.: 4+	Saw other health care professional 4 or more times in last 6 months.
Outpatient: 3+	Sought treatment on an outpatient basis 3 or more times in last 6 months.

Figure 7
Impact of High Family to Work Interference on Use of Canada's Health Care System

Percent of respondents with high and low levels of family to work interference who, in the last six months, made the following use of these facets of the health care system



Key:

Physician: 3+ Saw physician 3 or more times inlast 6 months.

Outpatient: 3+ Sought treatment on an outpatient basis 3 or more times in last 6 months.

- 1.8 times more likely to have received care on an outpatient basis 3 or more times,
- 1.5 times more likely to have visited a hospital emergency room,
- 1.5 times more likely to have had to spend at least one night in the hospital,
- 1.5 times more likely to have sought care from a mental health professional, and
- 1.4 times more likely to have seen a physician 3 or more times.

The data in Appendix C support the idea that employees with higher levels of caregiver strain are in poorer physical health. Respondents in this sample with high caregiver strain make the greatest use of physician services, and are the most likely to have spent time in hospital on both an inpatient and an outpatient basis. They also make the greatest use of the emergency room. It would appear from these data that demands on Canada's health care system could be reduced by providing more supports for employed Canadians who have to deal with elder care issues.

5.7.4 Impact of caregiver strain on the use of Canada's health care system

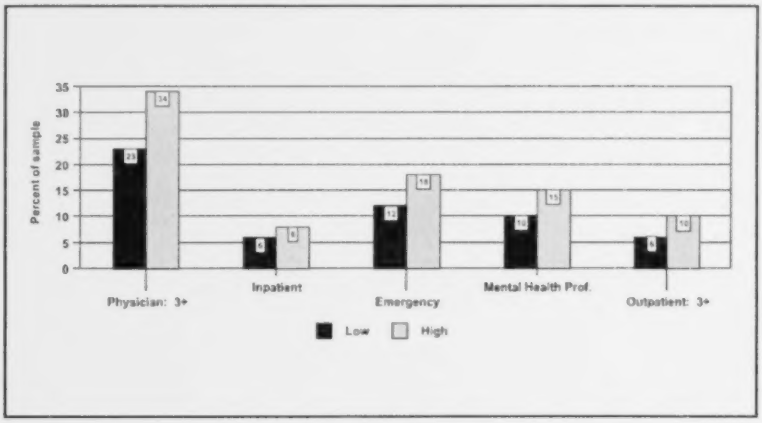
Data linking caregiver strain to the use of Canada's health care system are provided in Appendix C and shown graphically in Figure 8. Relative risk data are provided in Appendix D.

Caregiver strain can be linked to poorer physical health

Approximately one in four of the respondents to our survey has high levels of caregiver strain. This form of strain appears to be more closely linked to physical health problems and less strongly associated with mental health concerns than the other three forms of work–life conflict. In the six months prior to the study, compared to their counterparts with low levels of caregiver strain, employees with high levels of caregiver strain were:

Figure 8
Impact of High Caregiver Strain on Use of Canada's Health Care System

Percent of respondents with high and low levels of caregiver strain who, in the last six months, made the following use of these facets of the health care system



Key:

Physician: 3+ Saw physician 3 or more times inlast 6 months.

Outpatient: 3+ Sought treatment on an outpatient basis 3 or more times in last 6 months.

5.8 Summary: Use of the Health Care System

The data reviewed in this chapter indicate that employees with higher levels of work–life conflict make greater use of Canada's health care system.

High role overload, in particular, appears to be a substantive risk factor with respect to the incidence of physical and mental health problems that require employed Canadians to seek medical care. In the previous six-month period, compared to their counterparts with low levels of role overload, employees with high levels of role overload were 2.6 times more likely to have sought care from a mental health professional, 2.4 times more likely to have received care on an outpatient basis 3 or more times, 1.8 times more likely to have seen a physician 3 or more times, 1.6 times more likely to have sought care from another health care professional 4 or more times, 1.5 times more likely to have had to spend at least one night in the hospital and 1.4 times more likely to have visited a hospital emergency room.

These data suggest that the health of Canadians (especially their mental health) would improve and use of Canada's health care system could be reduced if the number of employees with high levels of role overload could be reduced. This would require both organizations and governments to address the issues of workload and increased use of office technology. It would also require that supports for the demands associated with both child and elder care be put into place in communities and organizations.

Similarly, employees who meet work demands at the expense of time for their family (about one in three of Canadian employees) are substantially more likely than those without this form of work–life conflict to have sought care from a mental health professional (relative risk of 1.7) and seen their physician 3 or more times in a six-month period (relative risk of 1.6). Also worthy of note is the fact that employees with high levels of work to family interference are 1.7 times more likely to have received care on an outpatient basis 3 or more times in a six-month period and 1.5 times more likely to have visited a hospital emergency room.

These data imply that demands on the health care system could be reduced if employers implemented policies which have been found to make it easier for employed Canadians to combine work and non-work roles. Suggestions here include greater use of flexible work arrangements such as flextime and compressed work weeks, and more judicious use of job-related travel.

The high levels of caregiver strain experienced by one in four of the respondents to this study appear to be closely linked to physical rather than mental health problems. In the previous six-month period, compared to their counterparts with low levels of caregiver strain, employees with high levels of caregiver strain were 1.8 times more likely to have received care on an outpatient basis, 1.5 times more likely to have visited a hospital emergency room and 1.5 times more likely to have had to spend at least one night in the hospital. It would appear from these data that demands on Canada's health care system can be reduced by providing more supports for employed Canadians who have to deal with elder care issues.

Finally, it is important to note that while individuals with higher levels of family to work interference make more use of Canada's health care system than their counterparts who do not experience such interference, the magnitude of the relationship between this form of work–life conflict and the use of Canada's health care system is (with one exception) lower than can be observed with the other three forms of work–life conflict. The exception to this trend is visits to mental health professionals. Employees with high levels of family to work interference are almost two times as likely to have sought care from a mental health professional than their counterparts with lower family to work interference. Future research in this area is needed to determine the direction of causality of this relationship.

The over-riding conclusion one reaches from the data presented in this chapter is that Canada can no longer afford to leave it to employers and employees to deal with issues around work–life conflict. The tendency to do so for the past decade has resulted in higher levels of work–life conflict (role overload and caregiver strain in particular). The data reviewed in this chapter link higher work–life conflict with greater use of the health care system and the concomitant increase in health care costs. While employers may be saving money by "doing more with less," downsizing and rightsizing, Canadian taxpayers are paying a premium for this strategy as it is their tax dollars that are funding the health care system. Employers are also paying "hidden" costs as the high use of other health care professionals is likely paid for by employer benefit plans.

The data in this chapter also support the idea that greater attention to workplace health issues (of which work–life conflict is one) may yield higher returns with respect to efficiencies within the health care system than other strategies that focus strictly on health care delivery systems.

Chapter 6

Estimate of the Health Care Costs Associated with High Work–Life Conflict

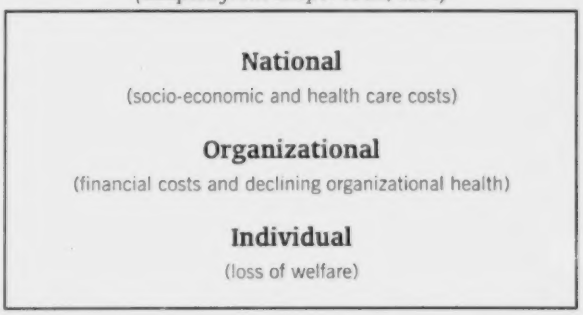
Until now, we have viewed work–life conflict in terms of its considerable human costs, and the associated direct and indirect costs borne by organizations. Work stress and work–life conflict, however, are not only problems of individual employees and organizations, but are wider societal problems that are ultimately shared by all players in society (Cooper et al., 1996). This chapter of the report will take the discussion one step further by attempting to assign a dollar value to the cost of work–life conflict at the national level.

This chapter is divided into six sections. The socio-economic model used as the rationale for examining the costs of work–life conflict at the national level will be presented in Section 1. Section 2 will present the costs of high role overload in terms of visits to physicians, inpatient use of Canadian hospitals, and visits to emergency departments. Similar data will be examined with respect to work to family interference, family to work interference and caregiver strain in Sections 3 through 5, respectively. The key results from this analysis will be summarized in the last section of this chapter.

6.1 Model for Socio-Economic Assessment of Work–Life Conflict

The model chosen to illustrate the national cost of work–life conflict is taken from a series of studies on workplace health currently under way in the European Union (Cooper et al., 1996; Levi & Lunde-Jensen, 1996). The researchers involved in this project have been attempting to measure the extent of workplace stress in the European Union, and to estimate its impact across the broader European community. The term "socio-economic" refers to the need to calculate the effects of workplace stress for society as a whole, across the economic sectors—to include not only individuals and business, but also governments and the broader society[27] (Cooper et al., 1996; Levi & Lunde-Jensen, 1996). A socio-economic perspective on work–life conflict, therefore, addresses the costs of employee stress and ill health at three levels: the employee, the employer, and the broader society and health care system (Figure 9).

Figure 9
Three Perspectives on the Economic Costs of Work-Related Stress
(adapted from Cooper et al., 1996)



The above socio-economic perspective suggests that, to estimate the true cost of workplace stress, we must look not only at the costs incurred by organizations (e.g. in terms of lost output due to absence), but also to other societal sectors for the "hidden costs" (Levi & Lunde-Jensen, 1996). In economic terms, hidden costs are referred to as "externalities": significant costs that are borne by segments of society who are not receiving the benefits (Levi & Lunde-Jensen, 1996). For example, when employers driven by short-run bottom line concerns increase workloads but provide little or no support to their employees (as has been shown to be the case in the Canadian work–life arena—see Duxbury and Higgins [2003]), organizations benefit through increased profits, while somebody else pays. In the case of work–life conflict, it is the employee who pays through distress and illness, employers who suffer from a resultant loss of productivity at work and the Canadian health care system that experiences higher levels of utilization and their associated costs.

27 In this report, we are restricting the analysis at the national level to costs borne by the public health care system. In Duxbury and Higgis (2003), we focused on the costs to organizations of increased absenteeism. The socio-economic costs of work stress and work–life conflict are far-reaching, however, and extend well beyond these segments of society. These effects may include lost opportunities for further education, involuntary early retirement caused by stress, increased taxation to cover the costs of social support, and a decline in the standard of living due to reduced productivity (Cooper et al., 1996). The list is virtually limitless. No attempt was made to explore these very serious, but complex issues in this report.

How much could health care costs be reduced if Canadian employees were more able to balance work and life? Until now, we have used outcome measures to examine the indirect costs of high work–life conflict associated with use of the health care system. This chapter will take the discussion one step further by attempting to assign a dollar value to use of Canada's health care system associated with high levels of work–life conflict.

The method of socio-economic assessment used by Levi and Lunde-Jensen (1996) to calculate the estimated cost of work-related stress at the national level was adapted for this study to the specific case of work–life conflict. A complete discussion of the methodology used to estimate the costs is beyond the scope of this study but can be found in Duxbury et al. (1999). A summary of relevant details is given for the interested reader in Appendix E while a synopsis of the vocabulary associated with this model is provided in Box 8. In all cases, the calculations were undertaken as described in Appendix E. Key data are summarized in Table 1.

6.2 Health Care-Related Costs of High Role Overload

Physician visits could be reduced by 25% if high role overload could be eliminated

Approximately 58% of the employees working for Canada's larger employers are at high risk with respect to role overload. Employees with high role overload made an average of 1.74 visits to a physician in a six-month period, while those with low role overload made only 1.11 visits. In other words, the relative risk of physician visits associated with high role overload is 1.58. The etiologic fraction of role overload is therefore 25% (i.e. physician visits could be reduced by approximately 25% if governments/organizations eliminated high levels of role overload). The direct cost of physician visits due to high role overload was calculated to be approximately $1.8 billion per year.

Box 8

Socio-economic Assessment: Summary of Terminology

Prevalence: The proportion of the workforce exposed to the risk factor. Four risk factors are examined: high role overload, high work to family interference, high family to work interference and high caregiver strain.

Relative risk: The proportion of use of the health care system that can be associated with each of these risk factors. Three dimensions of use of the health care system are examined: visits to the physician, overnight hospital stays (i.e. inpatient hospital visits) and visits to an emergency department.

Etiologic fraction: The percentage of the use of the health care system occurrence that would not have occurred had each of these risk factors been absent.

Table 1: Health-Realted Costs of Work–Life Conflict

	Role Overload	Work to Family Interference	Family to Work Interference	Caregiver Strain
Cost of excess physician visits due to:	$1.84 billion	$643 million	$215 million	$567 million
Cost of excess inpatient hospital stays due to:	$3.82 billion	$1.98 billion	$247 million	$4.12 billion
Cost of visits to emergency department due to:	$265 million	$144 million	$52 million	$164 million
Estimated Total	**$5.92 billion**	**$2.77 billion**	**$514 million**	**$4.85 billion**

High role overload increases the costs associated with inpatient hospital care by close to $4 billion a year

As noted previously, there is a strong positive association between role overload and the need for inpatient hospital care. The number of excess days spent in the hospital that can be attributed to high role overload was calculated to be just under six million. These excess days cost Canadian taxpayers just under $4 billion per year. Furthermore, the data indicate that the number of days spent in hospital could be reduced by approximately 17% if role overload could be reduced. Such a strategy would likely reduce the problems many hospitals have with respect to available beds.

Emergency department visits could be reduced by 23% if high levels of role overload could be decreased

Employees with high levels of role overload are 1.5 times more likely to seek care at a hospital's emergency department than their counterparts with low role overload. This increased use of the hospital's emergency department costs the health care system approximately one quarter of a billion dollars per year. Emergency department visits could be reduced by 23% if high levels of role overload could be reduced. Such actions could substantially reduce wait times at hospitals and demands on health care personnel.

6.3 Health Care-Related Costs of High Work to Family Interference

Cost of physician visits due to high work to family interference is approximately $650 million per year

Just over one in four (28%) of the respondents to this survey are at high risk with respect to work to family interference. It would appear that the number of physician visits made by Canadians per year could be reduced by 8.7% if work to family interference was eliminated—a savings of approximately two thirds of a billion dollars per year.

Costs associated with inpatient hospital care due to high work to family interference are almost $2 billion per year

Employees with high work to family interference are substantially more likely to require inpatient hospital care than those with lower levels of interference. These excess visits (about three million) cost Canadian taxpayers almost $2 billion per year. This suggests that the costs associated with inpatient hospital care could be reduced by approximately 9% if employees were more able to balance competing work and life demands and did not meet work demands at the expense of commitments to family and non-work roles.

Emergency department visits could be reduced by 12% if interference from work to family was reduced

Employees with high work to family interference are 1.5 times more likely to seek care at an emergency department than their counterparts with lower levels of interference. This amounts to over 1.6 million extra visits per year by employees with high work to family interference. The cost of these extra visits is approximately $144 million per year.

6.4 Health Care-Related Costs of High Family to Work Interference

Family to work interference has less of a negative impact on health care costs

Both the relative risk and the absolute risk associated with high family to work interference are lower than observed with the other forms of work–life conflict. In terms of absolute risk, only one in ten of the respondents to this survey put family ahead of work (i.e. reported high levels of family to work interference). Similarly, the relative risk associated with high family to work interference is lower than observed with respect to role overload. Nevertheless, the cost for more physician visits associated with this form of work–life conflict is calculated to be just under a quarter of a billion dollars a year. Similarly, the increased number of inpatient hospital days due to this form is interference is estimated to cost another quarter of a billion dollars.

While the relative risk of visiting the hospital emergency department garnered from this form of work–life conflict is similar to that observed with role overload and work to family interference, the costs associated with these visits is lower (about $52 million), due largely to the fact that few Canadians allow family demands to take priority over work (i.e. prevalence is low).

6.5 Health Care-Related Costs of High Caregiver Strain

Cost of physician visits due to high caregiver strain over half a billion dollars per year

One in four respondents to this study reported moderate to high levels of caregiver strain (i.e. experience caregiver strain once a week or more). These levels of caregiver strain end up costing Canadian taxpayers approximately half a billion dollars per year due to the increased number of physician visits resulting from this form of work–life conflict. These costs can be expected to increase in the future as the proportion of the workforce with elder care responsibilities increases (see Higgins & Duxbury [2002] for a discussion of this issue). The government could reduce physician visits by close to 10% (etiologic fraction of 7.7) by providing assistance to working employees with elder care issues.

Inpatient hospital stays could be reduced by almost 20% if caregiver strain was reduced

Employees with high levels of caregiver strain are 1.86 times more likely to require inpatient hospital care than those with low caregiver strain. In fact, the relative risk of hospitalization is higher for this form of work–life conflict than any other. This fact is reflected in data which show the increased costs of inpatient hospital care associated with high levels of caregiver strain are just over $4 billion per year.

High levels of caregiver strain cost taxpayers almost $200 million a year in increased use of emergency departments

Data on the use of hospital emergency departments associated with high levels of caregiver strain are similar to what was observed with respect to inpatient hospital stays. Employees with high levels of caregiver strain are 1.63 times more likely to seek care at a hospital emergency department than those with low caregiver strain. The relative risk of visiting an emergency department is higher for this form of work–life conflict than any other and costs of visits to the emergency room associated with high levels of caregiver strain are second only to those observed with respect to role overload—$164 million per year.

6.6 Summary

Application of the socio-economic model has provided a glimpse of the potential financial cost of work–life conflict to the Canadian health care system. The model suggests that failure to respond to the needs of employees who are experiencing work–life conflict has contributed not only to mounting stress for employees, but also to substantial "hidden" costs to employers and governments.

Our estimates suggested that, in 2001, the health care–related costs of high work–life conflict were staggering—approximately $6 billion a year attributable to high role overload, $5 billion a year to high caregiver strain, $2.8 billion to high work to family interference and half a billion dollars for high family to work interference.[28] It should be noted that the above estimates are likely to be quite conservative approximations of the amount that work–life conflict is actually costing Canadians. The cost estimates provided in this report were calculated using data on only those within the high-risk groups. Calculations (not shown) indicate that the estimates increase substantially (i.e. more than double) if we also include those at moderate risk (i.e. moderate levels of work to family and family to work interference). It should also be noted that some of the costs attributed to the different types of health care are derived from 1998-99 data (i.e. physician costs) and 1999-2000 data (i.e. hospital stays). It is likely that the costs associated with these services have increased over the past several years.

The data in Table 1 indicate that two forms of work–life conflict are particularly costly, both in terms of increased demands on the system and increased costs: high role overload and high caregiver strain. Role overload appears to be the greatest culprit: physician visits would be 25% lower, inpatient hospital stays would be reduced by 17% and use of Canada's emergency rooms would be cut by 23% if high levels of this form of work–life conflict could be eliminated. These findings suggest that the downsizing strategies implemented by many employers throughout the 1980s and 1990s and the concomitant increase in employee workloads (see Higgins & Duxbury [2002]) have backfired. The data reviewed in this study indicate that the savings in payroll (i.e. salary and benefit dollars) realized by corporations and public sector employers through downsizing may be offset by substantial increases in costs to the health care system. It would appear that work–life conflict is not only a moral issue—it is a productivity and economic issue, a workplace issue and a social issue, and needs to be addressed as such.

28 It should be noted that these four forms of work–life conflict are correlated (see Duxbury & Higgins, 2003). This means that there will be some degree of overlap with respect to the costs associated with each form of work–life conflict. As such, we cannot add these four amounts to arrive at a total cost to the health care system of work–life conflict.

Caregiver strain is also problematic. Analysis of our data suggest that physician visits could be reduced by 8%, inpatient hospital stays lowered by 18% and use of Canada's emergency rooms cut by 14% if high levels of this form of work–life conflict could be eliminated. These findings suggest that the aging of the Canadian workforce and the greater need to provide elder care is overwhelming employees' ability to cope with both work and life demands. The lack of social and governmental support for elder care, as well as inflexible work schedules, mean that employees with elder care commitments often have no choice but to miss work and/or take an unpaid leave of absence. If nothing is done to alleviate the demands placed on these workers, ill health due to this form of work–life conflict is likely to increase dramatically in the next decade as more baby boomers assume responsibility for the care of their parents. These findings indicate that if business does not take strategic action with respect to this issue soon (e.g. implement family-friendly work arrangements and benefits), the government should step in and take action to help employees deal with elder care issues. The country cannot afford to pay the health care costs incurred by organizational inaction in this area.

After examining the data in this chapter, the relevant question changes from "how much will it cost us to deal with the issue of work–life conflict" to "how can governments afford *not* to address the issue of work–life conflict?"

Chapter 7

Impact of Work–Life Conflict on Prescription Drug Use

This chapter addresses the following questions:

- How much money do Canadian employees spend on prescription drugs?
- What impact does gender, job type, dependent care status and sector of employment have on the amount spent on prescription medicine?
- What is the link between work–life conflict and the amount spent on prescription medicine?

Data related to these questions are presented in Appendices B and C and discussed below.

The chapter is divided into four main sections. Background information on the use of prescription medicine in Canada is given in Section 1. Data on the prescription drug use of Canadian employees responding to our survey are presented and discussed in Section 2. Included in this section is a discussion of how gender, job type, dependent care status and sector of employment are associated with prescription drug use. The link between prescription drug use and work–life conflict is made in Section 3. A summary of the key findings with regard to prescription drug use is provided in Section 4.

7.1 Use of Prescription Medicine in Canada

Prescription and over-the-counter medicines help Canadians in a number of different ways. According to CIHI (2002, p. 77), they can "save lives, reduce the need for surgery, and maintain or improve our quality of life." Millions of Canadians take drugs daily, and most fill at least one prescription each year (CIHI, 2002). In 2000, there were approximately 22,000 drugs on Health Canada's list of drugs approved for human use. Approximately 5,200 of these can be considered prescription drugs (CIHI, 2002). Many of these medicines are considered "halfway technologies" in that they reduce symptoms but do not prevent or cure the underlying condition (CIHI, 2002). The following section provides a short summary of what is known about prescription drug use in Canada.

Most Canadians rely on prescription and non-prescription medicine to treat ill health

CIHI (2002) reports that just over three quarters (78%) of Canadians aged 12 or older said that they had used one or more prescription or over-the-counter medications in the last month of 1998-99. Women and older Canadians are more likely than others to report using medications (CIHI, 2002).

Most Canadians use painkillers

Which medications are used most frequently? According to the 1998-99 National Population Health Survey, the most common drugs taken included painkillers (taken by 65% of Canadians in the month prior to the survey being done), heart medication (13%), stomach remedies (13%), antibiotics (8%), sleeping pills and tranquilizers (5%) and antidepressants (4%) (CIHI, 2002). Duffy (2002) reports similar data for 2001 when Canadians spent an estimated $15 billion on pills for headaches, high blood pressure, high cholesterol, depression, arthritis, asthma and other illnesses (Duffy, 2002). A more generic view of the situation comes from the Patented Medicine Price Review Board (cited in CIHI, 2002). According to this group, manufacturers sold approximately $6.3 billion of patented medicine in Canada in 2000. This works out to almost two thirds (63%) of Canada's total drug sales. By comparison, prescription medication comprised 43% of the total drug sales in 1995. Non-patented medication made up 28% of the rest of the drug sales in Canada in 2000. Generic drug sales accounted for only 9% of the sales in 2000.

Canadians spend an average of $500 per person per year on medication

In 1993, prescription and non-prescription medications were estimated to cost $9.884 billion and to account for 6.3% of the total economic burden of illness in Canada (Statistics Canada, 1999). This had risen to approximately $15.5 billion per year by 2001—an increase of 8.6% over the previous year (Duffy, 2002). The Government of Canada (and hence all taxpayers) pay almost half (43%) of these costs. The rest is paid by private insurance companies and individuals.

Canadians spend more per person on drugs than most other countries

Canada spends more per person on drugs than most other countries. In 1997, only four of the 25 OECD countries that reported their spending on drugs (France, United States, Japan and Belgium) spent more per person than Canada (CIHI, 2002).

Costs for medications have increased dramatically over time

Costs for medications have increased dramatically since 1979 (Statistics Canada, 1999). The available data indicate that, in 2001, Canadians spent more than twice as much per person on retail drug sales than they did in 1990 (unadjusted for inflation) (CIHI, 2002).

Much of this increase can be attributed to an older population, increasing drug prices and a greater dependency on medication

Why is spending on drugs rising? CIHI (2002) offers the following possible reasons: changes in the size of the total population, population demographics, the health of Canadians, increases in the unit prices of patented and non-patented drugs, in retail and wholesale mark-ups, of professional fees, in the prescription habits of physicians, and in the utilization of drugs on a per patient basis (i.e. more medications per patient per year). Other possible reasons for the increased expenditures include the trend toward drug therapy (rather than surgery), the emergence of new diseases for which drugs are the treatment of choice, and the development of new drugs to treat old diseases (CIHI, 2002).

Duffy (2002) notes that, while Canada's growing drug expenditures can be blamed on the aging of our population and the creation of more and better drugs, demographics and supply are not the only explanations for this phenomenon. He attributes much of the increase to the fact that the price of drugs in Canada does not compare favourably with those in other countries and "the market does not operate in the interest of public health" (Duffy, 2002, B2). He illustrates his case by providing the following data:

- In 1996, the average prescription cost $29.62. In 2000, the average cost had jumped to $37.79.
- In Ontario, the average prescription price jumped 53% between 1993 and 1999, even though the province froze prices for all existing products on its government-insured medicines list.

Duffy also notes that the number of drugs being prescribed per capita increased by 25% between 1996 and 2002. These data are disturbing for, as he observes, "Canada does not have the economic might to continually spend this kind of money on health care."

In Canada, both public and private sectors pay part of the drug bill

In Canada, both public and private sectors pay part of the drug bill. Public sector payments come from governments, Workers' Compensation Boards and other social security systems. Individual Canadians pay some of the drug costs out of their own pockets, while private insurance (often provided through the employer) is the other major source of funds (CIHI, 2002). While public and private sector per capita spending on retail drugs (unadjusted for inflation) has been increasing steadily since 1975, public sector funding has been increasing at a faster pace (16% increase between 2000 and 2001) than private sector funding (increase of 3% during this same time period) (CIHI, 2002).

7.2 Use of Prescription Medicine by Employed Canadians

The research data provide us with additional information on prescription drug use by Canadians employed by the country's largest employers.

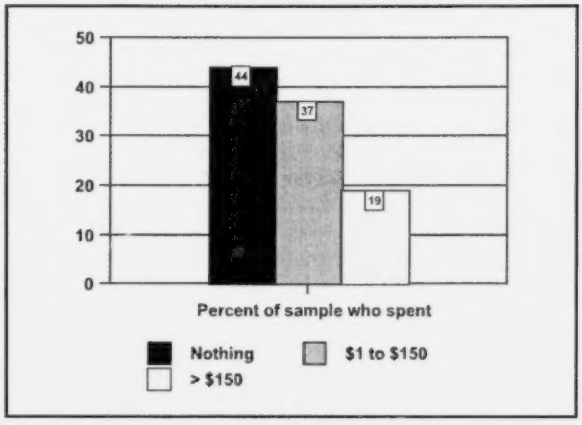
One in five employed Canadians makes heavy use of prescription drugs

The typical Canadian employee spent approximately $81.82 in a six-month period on prescription medicine. While 44% of employees did not purchase any prescription drugs, one in five (19%) spent more than $150 in a six-month period on prescription medicines for his or her own personal use. The rest of the respondents (37% of the sample) spent between $1 and $150 in the six-month period prior to the study being done (see Figure 10).

Most of the costs of these prescription medicines are borne by the employer

In most cases, these prescription drug costs are borne by the employer. Eighty percent of the respondents noted that their employer paid for 100% of their drug costs. Virtually all of the other employees indicated that they and their employer shared the costs of prescription drugs.

Figure 10
Amount Spent on Prescription Drugs in a Six-Month Period



Women spend more money on prescription drugs than men

Women spend more on prescription drugs than men. This gender difference could be observed in all job types, all sectors and was true for respondents with and without dependent care responsibilities. This gender difference in prescription drug use is consistent with what has been reported in the literature (CIHI) and is consistent with the fact that women are more likely than men to seek care (e.g. visit physician, see other health care professionals, use the services of mental health professionals, receive outpatient treatment). While spending on medications like birth control pills may explain some of the variance in the data, it is unlikely to explain all. Again, it is hard to tell from these data if these gender differences are due to more appropriate use of the health care system by women (e.g. women are more likely to seek care when they are ill and receive the appropriate treatment at an early stage of the illness) or a tendency on the part of men only to seek care when they are physically unwell.

Women in "other" positions in the organization spend more on prescription drugs

Women in "other" positions spend more money on prescription drugs than their counterparts in managerial and professional positions (21% of the women in the "other" sample spent more than $150 in a six-month period vs. 18% of women in the managerial and professional sample). No such job difference was observed for the men in the sample. These findings are consistent with those observed with respect to perceived health (women in "other" positions are more likely than female professionals to rate their health as fair/poor) and physician use, and reinforce our contention that either managerial and professional jobs offer a health advantage to women or that clerical and administrative jobs (i.e. pink collar jobs) have a more deleterious impact on the health of women than blue collar jobs do on the health of men. It is also possible that this difference reflects a different orientation toward prescription drug use by women in "other" positions within the organization.

Mothers and female caregivers spend more on prescription drugs

Women with dependent care responsibilities spend more money on prescription drugs than women without such responsibilities (21% of women with dependent care responsibilities spent more than $150 in a six-month period on prescription medicine vs. 19% of women without such responsibilites). No such difference was observed for the men in the sample. Employees (both men and women) with dependent care responsibilities were also more likely to visit mental health professionals. When taken together, these data would suggest that women with dependent care responsibilities may be receiving prescription medicine for stress/depression, etc.

Employees in the public sector spend more money on prescription medicine

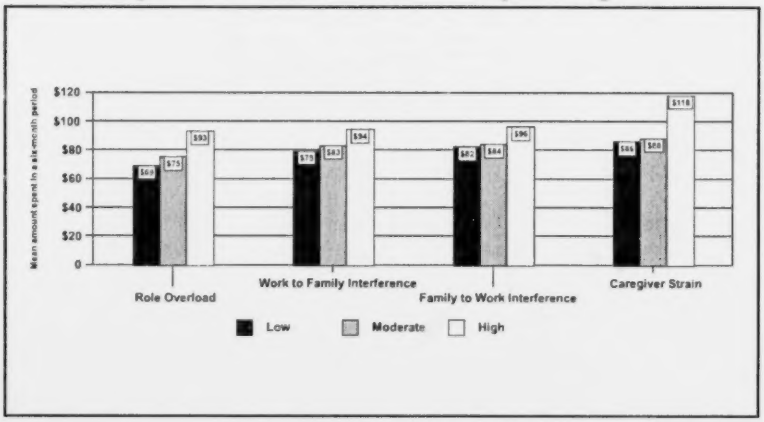
Findings with respect to amount spent on prescription medicine are virtually identical to those reported with respect to perceived health, visits to a physician, visits to other health care professionals and mental health professionals, and outpatient visits: women in the public sector are the highest users of prescription medicine (23% spent more than $150 on prescription medicine in the six months prior to the study being done) while men in the private sector are the lowest users (only 12% of the men in this group spent this amount on prescription medicine in this time period). In addition to these differences, two other disparities are worth noting. On the one hand, men in the public sector sample were more likely to spend $150 or more on prescription drugs than men in the NFP sector who were, in turn, more likely to spend this amount than men in the private sector. For the female sample, on the other hand, women in the private sector sample were more likely than the women in the NFP sample to spend $150 or more on prescription drugs. In both cases, however, public sector respondents were more likely to spend $150 or more on prescription medicine than employees in the other two sectors. It is difficult from these data to determine why public sector employees spent more money on prescription medicine. Several, not necessarily mutually exclusive, explanations are possible. First, these data may indicate that the benefits packages

in the public sector are more generous than those found in other sectors. Alternatively, they may indicate that public sector employees are in poorer health than their counterparts in the private and NFP sectors.

7.3 Link Between Prescription Drug Use and Work–Life Conflict

Three of the four measures of work–life conflict included in this study are strongly associated with prescription drug costs. Key data are shown in Figure 11 and Appendices C and D and discussed below.

Figure 11
Impact of Work–Life Conflit on Prescription Drug Use



Tests for Between Group Differences

Role Overload	F=84.5 (2), p=0.0001, High > Moderate > Low Role Overlaod
Work to Family Interferences:	F=29.6 (2), p=0.0001, High > Moderate and Low Interference
Family to Work Interference:	F=8.10 (2), p=0.0003, High > Moderate and Low Interference
Caregiver Strain:	F=28.6 (2), p=0.0001, High >Moderate and Low Caregiver Strain

Overloaded employees spend more on prescription drugs

Employees with high levels of role overload spend an average of $93 every six months on prescription drugs. This is significantly higher than the $75 spent by those with moderate levels of role overload and the $69 spent by those with low role overload. Extrapolation of these data suggest that companies that pay for 100% of their employees' prescription drug expenditures (80% of the companies in this sample) could save an average of $36 per employee per year if they could reduce role overload to moderate levels and almost $50 per employee per year if they could get role overload to low levels.

The relative risk data can be used to make a similar case. Employees with low levels of role overload are 1.3 times more likely to have spent nothing on prescription drugs in the six months prior to the study being done than employees with high levels of role overload. However, employees with high levels of role overload are almost twice as likely (relative risk of 1.9) as those with low role overload to have spent $150 or more in a six-month period on medications. These data reinforce our conclusion that there are significant bottom line costs to overworking employees—increased benefit expenditures.

Employees who consistently let work interfere with family also spend more on prescription drugs

Employees with high work to family interference are 1.3 times more likely than those with lower levels of interference to spend $150 or more on prescription medication in a six-month period. They spent approximately $94 in a six-month period on medication for their own use, $30 per year more than their counterparts with low interference. We have noted previously that employees who put work ahead of family pay a price for this behaviour in terms of increased stress, depressed mood and lower life satisfaction. It appears from these data that employers also pay a price to their bottom line through increased benefit costs.

Family to work interference is not strongly associated with prescription drug use

Approximately 10% of the sample put family first (i.e. they let family roles and responsibilities take priority over work role demands by refusing to stay late at work, travel for work, take a promotion). It is interesting to note that this type of behaviour does not appear to be strongly associated with prescription drug use. The relative risk of high family to work interference is below 1.3 which is consistent with the fact that respondents with high family to work interference do not make as much use of health care services as their counterparts with high role overload or caregiver strain.

Employees with high levels of caregiver strain spend substantially more on prescription medicine

The other form of work–life conflict associated with higher prescription drug expenditures is caregiver strain. Employees with high caregiver strain are 1.6 times more likely to spend $150 or more in a six-month period than employees with low caregiver strain. The average employee with high caregiver strain spends approximately $118 in a six-month period on prescription medicine compared to $86 spent by those with low caregiver strain. The higher drug expenditures reported by those suffering from this form of work–life conflict are not surprising because they are more likely than respondents with other forms of work–life conflict to have sought care in a hospital setting (either as an inpatient, in the emergency department or on an outpatient basis) in the six months prior to the study being done. It would appear that caregiver strain is associated with an increased incidence of illness that requires medical treatment and prescription drugs.

7.4 Summary

Canada spends more per person on drugs (approximately $15.5 billion per year) than most other countries. In fact, prescription and non-prescription medications were estimated to account for 6.3% of the total economic burden of illness in Canada (Statistics Canada, 1999). The Government of Canada (and hence all taxpayers) pay almost half (43%) of these costs. The rest is paid by private insurance companies and individuals. The findings from this study suggest that these drug costs could be reduced substantially if governments and organizations were to successfully address the issue of work–life conflict.

On average, Canadian employees in this sample spent approximately $82 on prescription medicine in a six-month period. While 44% of employees did not purchase any prescription drugs, one in five (19%) spent more than $150 on prescription medicines for his or her own personal use. In most cases, these prescription drug costs are borne by the employer, as 80% of the respondents noted that their employer paid 100% of their drug costs.

Who spends more money on prescription medication? The data from this study suggest employees in the following groups are "at risk": women in "other" positions, women with dependent care responsibilities, public sector employees, individuals with high levels of role overload, and individuals with high levels of caregiver strain.

The data from this study suggest that organizations and governments that wish to reduce the amount of money spent on prescription medication (and hence company benefit costs) need to focus their attention on reducing two forms of work–life conflict: role overload and caregiver strain.

Chapter 8
Conclusions and Recommendations

The following research questions were addressed in this study:

- How do Canadian employees view their physical health?
- To what extent are Canadian employees making use of the various facets of Canada's health care system?
- How much do Canadian employees spend on prescription medicine?
- What is the impact of gender, job type, sector of employment and dependent care status on each of the above issues?
- How does work–life conflict (operationalized to include role overload, work to family interference, family to work interference and caregiver strain) affect each of the above issues?
- What impact does high work–life conflict have on health care costs in Canada?

These research questions were used to structure the main body of the report. Chapter Four looked at how Canadians employed in firms with more than 500 people view their health. Chapter Five provided benchmark data illustrating how often Canadian employees use various facets of Canada's health care system. An attempt to quantify the costs of work–life conflict on Canada's health care system and prescription drug use was made in Chapter Six. Data on prescription drug use by Canadian employees were given in Chapter Seven. Material on the effect of the various contextual variables (i.e. gender, job type, dependent care status, sector of employment) and work–life conflict on perceived health and use of the health care system was incorporated into Chapters 4, 5 and 7.

In an effort to clarify the material for readers, this final chapter of the report takes a different tack and uses the various forms of work–life conflict (rather than the research questions) as the organizing framework. The chapter is organized into seven sections beginning with a summary of relevant benchmark data from this study with respect to perceived health, prescription drug use and use of Canada's health care system (Section 8.1) and recapping key findings with respect to the impact of gender, job type, sector of employment and dependent care status on these constructs (Section 8.2). The next four sections look at the link between work–life conflict, perceived health, use of Canada's health care system and prescription drug use. Material on role overload is covered first (Section 8.3), followed by details associated with work to family interference (Section 8.4), family to work interference (Section 8.5) and caregiver strain (Section 8.6). Conclusions and key recommendations are offered in the final section of the chapter (Section 8.7).

8.1 Benchmarking the Current State of Affairs

How do Canadian employees view their physical health? While just under half of the respondents to this survey (48.4%) indicated that their health was very good or excellent, almost one in five (16.7%) perceived personal health to be fair or poor. This is a significantly lower proportion of respondents perceiving that they were in very good to excellent health (and not surprisingly a higher proportion reporting that they were in fair to poor health) than reported by Statistics Canada for Canadians aged 12 or older. While some of this difference might be explained by the age differences in the two samples (younger Canadians can be expected to enjoy better health than older Canadians), it is also likely that working conditions and job-related stress are taking their toll on Canadian employees' health status. These numbers are also a wake-up call for employers as they provide a conservative estimate of the proportion of the Canadian workforce that may be negatively impacting Canadian productivity through ill health, higher absenteeism and higher benefit costs.

To what extent are Canadian employees making use of the various facets of Canada's health care system? Employed Canadians routinely seek medical care from their physician and other health care professionals. In the six months prior to this study being done:

- Just over half (54%) of the respondents sought care from their physician for reasons other than a routine check-up or maternity follow-up. These

employees made an average of 5.7 physician visits per year.[29]

- One in three (29.3%) visited a hospital or clinic on an outpatient or day-use basis for medical tests or procedures. These employees made an average of 3.8 outpatient visits per year.
- One in three (31.8%) of the respondents sought medical care from a medical/health professional other than a physician. These employees made an average of 10 visits per year to other health care professionals.
- Just over one in ten of the employees in the sample (13.1%) sought medical care at a hospital emergency department for a personal health problem. These employees made an average of 3.2 visits per year to an emergency department.
- Just over one in ten (10.6%) of the respondents sought help from a mental health professional. These individuals made an average of 8.2 visits per year to a mental health professional.
- Almost 6% of the respondents required inpatient hospital care (i.e. stayed overnight in the hospital). These employees stayed in hospital for an average of 4.6 nights per year.

How much do Canadian employees spend on prescription medicine? The typical Canadian who works for the country's larger employers spent approximately $164 per year on prescription medicine for personal use. While 44% of employees did not purchase any prescription drugs, one in five (19%) spent more than $300 per year.[30] In 80% of these cases, these prescription drug costs are borne by the employer. The high degree of correspondence between the data on prescription drug expenditures and perceived health (i.e. respondents who spent $300 or more on prescription medication also rated their health as fair or poor) increases our confidence in these findings.

8.2 Impact of Gender, Job Type, Sector of Employment and Dependent Care

This research initiative has culminated in the collection of a large, rich, comprehensive data set with which to examine perceived health and the use of Canada's health care system by employed Canadians. One of the strengths of this research is the capacity this large data set provides to examine how key factors, such as the gender of the employee, the type of job held, the sector worked in, and the dependent care responsibilities assumed, affect an individual's perceived health, spending on prescription medication and use of various facets of the health care

Table 2: Summary of Between-Group Differences in Health Outcomes

Construct	% High/ % Yes	Impact on Health Outcome			
		Gender	Job Type	DC	Sector of Employment
Perceived Health	48.4%	No difference	Mgr./Prof. > "Other"	No DC > DC	PS < NFP and Priv.
Visited Physician	54.1%	W > M	W: "Other" > Mgr. No Difference for Men	No difference	PS > NFP > Priv. Male Priv. lower than all others Female PS higher than all others
Visited Other Health Care Professional	31.8%	W > M	No difference	No difference	Male Priv. lower than all others Female PS higher than all others
Visited Mental Health Professional	10.6%	W > M	No difference	DC > No DC	Male Priv. lower than all others Female PS higher than all others
Hospital: Inpatient	5.5%	No difference	No difference	No difference	No difference
Hospital: Emergency	13.1%	No difference	"Other" > Mgr./Prof.	No difference	No difference
Outpatient Treatment	29.3%	W > M	No difference	No difference	Male Priv. lower than all others Female PS higher than all others
Spent $150 or more on prescription drugs in six-month period	18.5%	W > M	W: "Other" > Mgr. No Difference for Men	W: DC > No DC No difference for men	Male Priv. lower than all others Female PS higher than all others

Key to Table: ***W*** *= Women;* ***Mgr.*** *= Manager;* ***DC*** *= Dependent Care;* ***PS*** *= Public Sector;* ***M*** *= Men;* ***Prof.*** *= Professional;* ***Priv.*** *= Private Sector;* ***NFP*** *= Not for Profit Sector*

29 Note: In the survey, we asked respondents to use the six months prior to the study as their frame of reference when answering questions on use of the health care system, prescription drug use, etc. For the convenience of the reader, the data in the conclusion section are presented as visits or use per year. These estimates were obtained by multiplying the findings for a six month period by two.

30 The rest of the respondents (37% of the sample) spent between $1 and $300 per year on medications.

system. Key differences associated with these variables are summarized in Table 2 and discussed in the main body of the report.

8.3 Role Overload

Role overload is defined as the perceptual aspect of feeling overwhelmed, overloaded or stressed by the pressures of multiple roles. High levels of role overload have become systemic within the population of employees working for Canada's largest employers. Data from this research study indicate that the majority of Canadians who work for firms employing 500 or more people (58% of the sample) are currently experiencing high levels of role overload—an increase of 11 percentage points over the past decade.[31]

What is the impact of high levels of role overload on perceived health and the use of Canada's health care system?

What implications do high role overload have on the health of Canada's employees and the burdens placed on Canada's health care system? The findings from these data are unequivocal: employees with high levels of role overload are in poorer physical and mental health and made greater use of Canada's health care system than those with low levels of role overload. Compared to their counterparts with low levels of role overload, employees with high role overload are:

- 2.9 times more likely to say their health is fair/poor,
- 2.6 times more likely to have sought care from a mental health professional,
- 2.4 times more likely to have received care on an outpatient basis,
- 1.9 times more likely to have spent $300 or more on prescription medicine in the past year,
- 1.8 times more likely to have made 6 or more visits per year to a physician,
- 1.6 times more likely to have made 8 or more visits per year to another health care professional,
- 1.5 times more likely to have required inpatient hospital care, and
- 1.4 times more likely to have visited a hospital emergency room.

What do these data mean in terms of the health care system? Higher work–life conflict is associated with increased health care costs. For example, we calculated the direct cost of:

- physician visits due to high role overload to be approximately $1.8 billion per year,
- inpatient hospital stays due to high role overload to be almost $4 billion per year, and
- visits to the hospital emergency department due to high role overload to be approximately one quarter of a billion dollars per year.

What is the link between high work–life conflict and demands on the health care system? Could we reduce system demands if we could reduce role overload? The data reviewed in this study indicate a resounding yes! By implementing workplace and population health strategies targeted at reducing role overload, Canada would likely reduce the problems many hospitals have with respect to available beds, and substantially reduce wait times at hospitals and demands on health care personnel.

These data also indicate that employers who overwork their employees (i.e. place a high reliance on unpaid overtime) will pay a price—increased benefit expenditures. Companies that focus on reducing role overload would reap a number of benefits to their bottom line, including reduced absenteeism (see Duxbury & Higgins [2003]) and lower benefit costs.

8.4 Work to Family Interference

This form of work–life conflict arises because employees cannot be in two different places doing two quite different things at exactly the same time. People who experience this type of work–life conflict meet work demands at the expense of their family. A plurality of the working Canadians in our sample (38%) report moderate levels of work to family interference; just over one in four of the respondents (28%) report high work to family interference.

31 A full discussion of this phenomena can be found in Duxbury and Higgins (2003).

What is the impact of high levels of work to family interference on perceived health and the use of Canada's health care system?

From the analysis presented in this report, we conclude that employees with high levels of work to family interference are in poorer physical and mental health and make greater use of Canada's health care system than those with low levels of work to family interference. Compared to their counterparts with low levels of work to family interference, employees with high levels of interference are:

- 2.4 times more likely to say their health is fair/poor,
- 1.7 times more likely to have sought care from a mental health professional,
- 1.7 times more likely to have received care on an outpatient basis,
- 1.6 times more likely to have made 6 or more visits per year to a physician,
- 1.5 times more likely to have visited a hospital emergency room,
- 1.4 times more likely to have required inpatient hospital care, and
- 1.3 times more likely to have spent $300 or more on prescription medicine in the past year .

Not surprisingly, given the above data, higher levels of this form of work–life conflict are also associated with increased health care costs. For example, we calculated the direct health costs of high levels of work to family interference to be approximately $2.8 billion per year (two thirds of a billion dollars per year in physician visits, $2 billion per year in inpatient hospital stays and just over $100 million per year in visits to a hospital emergency department).

8.5 Family to Work Interference

This form of work–life conflict also arises because employees cannot be in two different places doing two quite different things at exactly the same time. This type of conflict reflects a different set of priorities, however, as employees who experience this form of interference allow their family demands to interfere with the fulfillment of responsibilities at work. The study indicates that only a small number of working Canadians experience this form of work–life conflict (approximately 10% of the sample). It should be noted, however, that the percentage of the sample with high family to work interference has doubled over the past decade. Analysis of the data (Duxbury & Higgins, 2003) suggests that much of this increase can be attributed to an increased need to care for elderly dependents.

What is the impact of high levels of family to work interference on perceived health and the use of Canada's health care system?

This form of work–life conflict is not as strongly associated with perceived health and use of the health care system as the other forms of work–life conflict examined in this study. While family to work interference is negatively associated with perceived health (employees with high family to work interference are almost twice as likely to say their health is fair/poor than employees with low family to work interference), and positively associated with use of Canada's health care system and prescription drug use, the magnitude of these relationships are (with one exception) lower than observed for the other three forms of work–life conflict. The extent to which this form of work–life conflict increases health care costs and demands is also lower than observed with respect to role overload and caregiver strain. These data would suggest that Canadian society will benefit (though employers may not) if more Canadians place a higher priority on family than work.

That being said, the data do indicate that there are health consequences associated with giving family roles a higher priority than work roles—poorer mental health. Employees with high family to work interference are almost twice as likely to seek care from mental health professionals than their counterparts with low levels of this form of interference. The cause of the increased incidence of mental health problems in this group (e.g. increased stress and depression) is hard to determine from the cross-sectional data collected for this analysis. Future research should seek to determine the direction of causality with respect to these findings (i.e. does putting family first cause increased stress or does an individual who is suffering from poorer mental health place an increased importance on family?).

8.6 Caregiver Strain

Caregiver strain is defined as feeling overwhelmed, overloaded or stressed by the pressures associated with being employed and being responsible for the care of an elderly or disabled dependent. Approximately one in four working Canadians experiences what can be considered to be high levels of caregiver strain. We can expect that this form of work–life conflict will increase dramatically over the next several decades as more employees become "at risk" (the aging of the Canadian population means that more employees will take on elder care responsibilities).

As such, it is important for us to understand how this form of work–life conflict affects perceived health and use of the health care system.

What is the impact of high levels of caregiver strain on perceived health and the use of Canada's health care system?

This form of strain appears to be more closely linked to physical health problems and less strongly associated with mental health concerns than the other three forms of work–life conflict. Employees with high levels of caregiver strain make the greatest use of physician services and are the most likely to have spent time in hospital on both an inpatient and an outpatient basis. They also make the highest use of the emergency room and spend the greatest amount on prescription medication. Compared to their counterparts with low levels of caregiver strain, employees with high levels of caregiver strain are:

- 1.8 times more likely to have received care on an outpatient basis,
- 1.7 times more likely to say their health is fair/poor,
- 1.6 times more likely to have spent $300 or more on prescription medicine in the last year,
- 1.5 times more likely to have sought care from a mental health professional,
- 1.5 times more likely to have required inpatient hospital care,
- 1.5 times more likely to have visited a hospital emergency room, and
- 1.4 times more likely to have made 6 or more visits per year to a physician.

It would appear from these data that caregiver strain is associated with an increased incidence of illness that requires treatment and prescription drugs.

Data on caregiver strain provide further support for our conclusion that work–life conflict is associated with increased health care demands and costs. For example, we calculated the direct costs of inpatient hospital stays due to high caregiver strain to be approximately $4 billion per year, of physician visits due to high caregiver strain to be over half a billion dollars per year and of visits to a hospital emergency department due to high caregiver strain to be over $100 million per year.

8.7 Conclusions and Recommendations

In this report, we have established that:

- work–life conflict in its various forms is a problem for many Canadian employees;
- high work–life conflict is associated with lower levels of perceived health for working Canadians, regardless of how we conceptualize work–life conflict;
- high levels of work–life conflict have a negative impact on the employers' bottom line and increase demands on Canada's health care system;
- the health care-related costs of high work–life conflict are staggering—approximately $6 billion a year attributable to high role overload, $5 billion a year to high caregiver strain, $2.8 billion to high work to family interference and half a billion dollars to high family to work interference,[32] and
- two forms of work–life conflict are particularly costly (both in terms of increased demands on the health care system, and increased health care and benefits costs): role overload and caregiver strain.

How can governments afford *not* to address the issue of work–life conflict?

After examining the data in this chapter, the relevant question changes from "how much will it cost us to reduce work–life conflict" to "how can governments afford *not* to address this issue?" Why should employers and governments promote and practise healthy workplaces that allow employees to balance work and life? Simply put, Canada's ability to be globally competitive in the future depends on our ability to address this issue. The data presented in this report paint a frightening picture of how inattention to workplace health is impacting our health care system. Health issues that arise due to heavy workloads at home and at work and an inability to balance conflicting demands not only cost the employer in increased absenteeism and health benefit costs but sick employees also have a negative impact on the health care system. As CCIH (2002, p. 22) notes:

> "The boundaries of the workplace are permeable and costs are easily transferred to other facets of society. It is for these reasons that workplace health must become a priority for governments and not just for employees, employers and unions."

32 It should be noted that these four forms of work–life conflict are correlated (see Duxbury & Higgins, 2003). This means that there will be some degree of overlapwith respect to the costs associated with each form of work–life conflict. As such, we cannot add these four amounts to arrive at a total cost to the health care system of work–life conflict.

The first priority for both employers and governments is to reduce the demands on working Canadians

The data suggest that employers and governments who wish to improve the health of their workforce, reduce the tax burdens on their citizens, and positively influence the health care system need to pay attention to role overload. This form of work–life conflict is strongly associated with heavy work demands, longer hours at work, higher amounts of unpaid overtime, greater amounts of work-related travel and a culture of face time (i.e. emphasis is on "presenteeism" as opposed to outputs and deliverables). It also represents the highest levels of relative and absolute risk with respect to poorer physical and mental health and all measures of use of Canada's health care system included in this study.

The main predictor of high role overload is time spent in paid employment. As we noted in Report One of this series (Higgins and Duxbury [2002]), time in work has increased dramatically during the past decade. Whereas one in ten respondents in 1991 worked 50 or more hours per week, one in four do so now; during this same time period, the proportion of employees working between 35 and 39 hours per week declined from 48% of the sample to 27%. This increase in time in work was observed for all job types and all sectors. Further work is needed to determine exactly why work demands have increased over the decade. Possible explanations drawn from the data include:

- organizational anorexia (downsizing—especially of the middle manager cadre—has meant that there are not enough employees to do the work and managers to strategize and plan);
- corporate culture (if you don't work long hours and take work home, you will not advance in your career, not keep your job during downsizing);
- increased use of technology (data collected elsewhere in the survey provide partial support for this supposition);
- global competition (work hours have been extended to allow work across time zones; increased competition and a desire to keep costs down have limited the number of employees it is deemed feasible to hire);
- the speed of change has increased to the point where many organizations have lost their ability to plan and prioritize—workloads increase when organizations practise crisis management (partial support for this hypothesis comes from data collected elsewhere in the survey); and
- employees are worried about the consequences of "not being seen to be a contributor"
- non-professionals may fear that they will lose their jobs if they do not work overtime, and
- professionals may worry that their career will stagnate if they do not work overtime.

The link between hours in work and role overload, burnout and physical and mental health problems (see Duxbury & Higgins, 2003) suggest that these workloads are not sustainable over the long term. The data from this study reinforce this conclusion. Canadians are subsidizing, through their tax dollars and financial support of the health care system, organizational practices such as "doing more with less," downsizing, basing promotions on hours at work, setting unrealistic work expectations, managing by crisis, etc. Organizations which employ such strategies should bear the financial costs of such strategies—not Canadian taxpayers. Duxbury and Higgins (2003) included several specific recommendations regarding the reduction of role overload. Other recommendations that may also address this issue are given below.

The second priority for both employers and governments is to reduce caregiver strain

As noted above, this form of work–life conflict appears to be closely linked to physical health problems and higher use of medical care services and prescription medications. The proportion of the workforce experiencing high levels of caregiver strain is also expected to increase dramatically in the next decade as, first the parents of the baby boomers, and then the baby boomers themselves, require care. If steps are not taken now to put policies, procedures and institutions into place to help employees care for their aging parents, the health care demands and costs associated with this kind of strain can be expected to increase dramatically in the near future.

The issue of caregiver strain was also covered in depth in Duxbury and Higgins (2003) and a number of recommendations on how such strain could be reduced were offered. Again, the interested reader is directed to this report for ideas and suggestions with respect to reducing caregiver strain. These suggestions can be augmented by implementing several of the additional recommendations given below.

Looking at the issue through a workplace health lens

This study has established the need for organizations to take more responsibility for workplace health issues such as work–life conflict—to look at these issues through a population health lens. How can this best be done? The

recommendations given below offer concrete suggestions on how the two major stakeholders, governments and employers, can work toward this goal. It should be noted, when reading this list of recommendations, that many of them are not unique to this study. As was noted at the beginning of this report, the last several years have seen a flurry of activity with respect to scrutinizing the health care system. The resulting studies have offered some excellent recommendations and suggestions on what should be changed and how this change can be accomplished. The recommendations and strategies suggested by CCIH (2002) were particularly useful in the formulation of advice offered in this document.

8.7.1 Recommendations to governments

Governments at all levels have a critical role to play with respect to this issue. Accordingly, we offer recommendations in five broad areas: structural changes at the governmental level; financial incentives for change; health promotion activities; elder care; and support of relevant research and data collection.

The health care system, as it is currently structured, does not support change

In the health care system, leadership is constantly in flux (since 1990 there have been 85 deputy ministers of health and 79 ministers of health at the federal, provincial and territorial levels) and the number of players at the government level makes it difficult to implement a coherent, focused, national strategy. Accordingly, we recommend that:

1. Governments focus on ensuring consistent leadership with respect to this issue. To do this, they need to investigate how to best reduce the amount of turnover at the top of government departments with responsibility for workplace health issues.

2. The federal government create one agency that takes the lead role in support of nationwide workplace health promotion and monitoring. This agency would coordinate and integrate the efforts of various government departments[33] with responsibility for health care delivery and health promotion. This agency would allow government to consolidate both knowledge and budgets, thereby increasing both efficiency and effectiveness.

Governments need to make the idea of change in this area attractive to employers

At this point in time, governments pay the lion's share of the costs associated with poor workplace health practices through their support of the country's health care system. To motivate employers to focus more attention on this issue, governments need to increase the tangible costs to employers of inaction in this area. They need to consider financial incentives to support employers that do their part to promote workplace health and penalties for those who do not. We recommend that they consider the following activities in this regard:

3. Offer employers financial incentives to encourage investment in workplace health promotion and disease prevention. Included within this umbrella should be activities targeted to reduce role overload, role interference and caregiver strain. These incentives could take the form of a tax rebate, changes to income tax, or come through the Workers' Compensation Program.

4. Remove the financial disincentives for employers to expand their health care funding activities. This could be done by allowing employers to write off the cost of health promotion and work–life programs.

5. Publish report cards on organizations which link employment practices to health care systems costs. These report cards would allow taxpayers to determine the extent to which they are subsidizing different organizational actions.

Governments need to create a public push for change in this area

Governments also have a critical role to play with respect to communicating the need for change in this area to the public at large and brokering partnerships with key stakeholder groups which have an interest in addressing these issues. Such a strategy will create further incentives for change at the organizational level. To this end, we recommend the following:

6. The costs (to the bottom line as well as opportunity costs) of ignoring workplace health and work–life issues should become the focus of government social marketing campaigns. These campaigns should be similar to those done for drinking and driving, and cigarette smoking and should

33 Right now, efforts are fragmented by the need to coordinate within government departments, among departments and between different levels of government.

emphasize how organizations and Canadian society benefit from healthy workplace practices.

7. Canada needs to use a population health model to re-frame the business case for workplace health promotion. Instead of discussing the achievement of individual return on investment (ROI) goals, the focus should be broader social objectives linked to health, wellness, balance and use of the health care system.

8. Governments need to create a website that serves as an electronic distribution centre for knowledge and best practices in this area. This website should also link these practices with organizations' bottom lines and illustrate the social benefits of these practices.

This issue has multiple stakeholders and it is unrealistic to think that governments alone can make the changes that are necessary. Accordingly, we recommend that:

9. Governments partner with communities and employers to find solutions to these issues.

Issues associated with elder care need to be given higher priority

The demands on family caregivers are likely to increase as Canada's population continues to age and the provision of services shifts from institutions to home and the community. Adequate and appropriate supports for caregivers are required to support them in their role. The data examined in this report identify the short-term costs of caregiving (e.g. poorer health, increased physician visits and prescription drug use). Recent research by Fast et al. (2000), however, indicates that this may be "the tip of the iceberg"—that there may also be long-term public expenditure implications if informal caregivers are not supported (i.e. they estimated that it would cost between $4.9 and $6.3 billion to replace voluntary family members with paid caregivers). Accordingly, we recommend the following:

10. Governments and employers increase the range of supports for employed Canadians with elder care responsibilities. Specifically:

    - Employees should consider implementation of the following types of supports: flexible work arrangements; compressed work weeks; family leave with pay; long-term leave of absence with pro-rated benefits.
    - Governments should consider the following types of support: making "out-of-pocket" elder care expenses tax deductible; sponsoring flexible, professionally staffed in-home and community-based respite care; extension of the compassionate care leave benefit[34].

Governments need to provide financial support for empirically sound research in the area

There is still a need to "prove" the business value of workplace health programs and develop the business case for change. There is a need for timely, accurate and reliable data on the health of Canadians and the health care system as "we cannot improve what we cannot measure" (CIHI, 2002). More research needs to be directed toward studies that specify the link between performance and productivity, and workplace health practices (CCIH, 2002). Accordingly, we recommend that governments:

11. Support research and pilot projects that establish best practice in workplace health management and support the development of sound public policy in this area.

12. Ensure that measurement systems are put in place to collect the data that are needed to track costs and change in this area. The following groups need to be involved in the collection of relevant data: hospitals, health care professionals and employers.

Finally, as one of the largest employers in the country, we recommend that:

13. Governments at all levels lead by example (e.g. promote workplace health and work–life balance initiatives).

8.7.2 Recommendations to employers

In Duxbury and Higgins (2003), we suggested a number of steps that could be taken by employers who were interested in improving workplace health and work–life balance. Suggestions included increasing employees' control over their workday (e.g. give them more flexibility) and their work (e.g. participation in decision making, empowerment), making work demands more realistic, and providing supportive work cultures and managers. Additional recommendations specific to the issues addressed in this report include:

34 While the Compassionate Care Leave benefit is an important first step in the support of elder caregiving, it will not benefit most caregivers who provide long-term care.

14. Employers need to analyze their benefit costs and understand who is using what facet of their benefit plan: employee assistance programs, short- and long-term disability claims (incidence and duration), workers' compensation benefits, workplace accidents, absenteeism, prescription drugs. Such assessment would allow the organization to put a dollar figure on the costs associated with workplace health and work–life conflict and help interested parties make a compelling case for change. As CCIH (2002) notes:

> "Such a case is necessary before organizations will make the financial/ cultural commitment to put together the changes necessary to move their organization towards healthier workplace practices and policies."

15. Human resource and occupational health and safety groups should work together to address these issues. Both groups have a key role to play in this area and have much to gain by working together (e.g. can broaden their constituencies and gain a better understanding of the big picture). A siloed approach to change in this area is likely to fail.

16. Employers should focus on the implementation of proactive workplace health measures (i.e. child care and elder care referral services, cafeteria benefit plans, flexible work arrangements, screening programs for disease or depression) rather than just reactive measures (e.g. employee assistance programs).

17. Employees should strategically link workplace health and work–life balance initiatives to broader organizational goals, such as recruitment, retention and succession planning. This strategy would reduce the need to prove the benefit of each work–life balance or workplace health initiative.

18. Employers should measure the impact of their work–life balance and workplace health programs on key outcomes and critical success factors.

19. Organizations should place accountability for work–life balance and workplace health initiatives with senior management (not human resources). Senior management has a critical role to play in creating a healthy work environment as they make most of the decisions with respect to how, when, where and under what conditions work gets done.

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Appendix A

History of Thinking Around Health Care in Canada

This appendix provides a brief overview of the history of health care reform in Canada. This review is not intended to be a comprehensive critique of this issue—such an effort would be beyond the scope of this report. Rather, the objective of this appendix is to provide context for this study and help the reader put the arguments and recommendations advanced into context.

Canadians are consumed with health and health care

Canadians are preoccupied with issues surrounding health and the provision of health care (CIHI, 2003). In the past several decades, there have been numerous task forces and commissions at the federal and provincial levels which have been tasked with diagnosing the nature of the problem and recommending solutions.

CIHI (2003) identifies three waves of reform that have led to the current set of health care initiatives:

- 1970s: Alternative Delivery and Organization Models Emerge: Focus was on the involvement of teams of health care professionals.
- 1980s: Primary Health Care Teams Expand: Focus was on expanded roles for non-physician primary health care professionals. While regionalization began at the end of the decade, provinces still had the main responsibility for fee-for-services funding for physicians.
- 1990s: The Age of Pilot Projects—Testing Change: Focus was on pilot demonstration primary health care projects which explored alternative methods of organization, delivery, governance, funding and/or remuneration.

An excellent summary of what policy makers have learned from these pilots can be found in the CIHI report (2003, pp. 22–23). The section below provides a brief summary of how thinking on health care vis-à-vis health promotion and population health models has evolved in Canada since the 1970s.

The 1970s: Alternative Service Delivery

During the 1970s, Canada pursued an agenda to promote the health of the Canadian population. In 1974, Marc Lalonde (who was the Minister of Health at the time) issued a report entitled *A New Perspective on the Health of Canadians*. This document espoused the following ideas:

> People's health is influenced by a wide range of factors, including "human biology, lifestyle, the organization of health care and the social and physical environments in which people live" (cited in Townson, 1999, p. 1).
>
> "Personal decisions and habits that are bad from a health point of view create self-imposed risks. When those risks result in illness or death, the victim's lifestyle can be said to have contributed to or caused his own illness or death" (cited in Townson, 1999, p. 2).

In other words, while the view espoused in Lalonde's report is in line with the population health model, the policy focus was more along the lines of the health promotion model (i.e. the emphasis was on the individual and the "choices" he or she made with respect to health—engaging in healthy versus unhealthy behaviours—rather than the social environment and its impact on health and the kinds of decisions an individual is able to make).

1980s: Primary Health Care and Regionalization

The provincial reports in the 1980s identified the following major themes: regionalization of health care delivery, an emphasis on wellness, prevention and population health, and the need for health care reform (CIHI, 2003).

In 1986, Jake Epp (who was Minister of Health and Welfare at the time) responded to the World Health Organization's challenge to governments to outline plans for meeting its goal of "Health for All by the Year 2000" by issuing a document entitled *Achieving Health for All: A Framework for Health Promotion* (Townson, 1999). This

document laid what was described as "a new vision of health" and sketched out six strategies (i.e. ensure access to health information, encourage consensus about health ideas, implement research in support of health promotion, foster public participation, advocate a strong role for the health care system and community health services, and coordinate policies between sectors) which would allow Canada to achieve this objective (Townson, 1999). At this time, the focus was one of health promotion rather than population health. Health policy was viewed as "setting the stage for health promotion by making it easier for people to make healthy choices" and the policy focus was on individual responsibility for improved health through the adoption of a healthy lifestyle (i.e. stop smoking, do not drink and drive) (Townson, 1999, p. 2).

Townson (1999) does, however, note that the government was beginning to see in 1986 that such an approach was not entirely realistic. She offers the following quote from *Achieving Health for All* (p. 3) to support her argument:

> "We cannot invite people to assume responsibility for illness and disabilities which are the outcome of wider social and economic circumstances. Such a "blaming the victim" attitude is based on the unrealistic notion that the individual has ultimate and complete control over life and death."

Also in 1986, Canada hosted the First International Conference on Health Promotion in Ottawa and adopted the Ottawa Charter on Health Promotion. This Charter argued that:

> "the fundamental conditions and resources for health are peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity. It calls for co-ordinated action to build healthy public policies, create supportive environments, strengthen community action for health, develop personal health skills and reorient health services" (cited in CIHI, 2002, p. 60).

It also called for action to be taken to build healthy public policy, create supportive environments (physical, social, economic, cultural, spiritual) that recognize the rapidly changing nature of society, particularly in the areas of technology and the *organization of work* (authors' emphasis), strengthen community action, develop personal skills, and reorient health services (CIHI, 2002).

1990s: Testing Change

The 1990s saw a shift, at least on the stated policy front, from the health promotion model to the population health approach. In 1994, Canada signalled its commitment to population health by issuing its report entitled *Strategies for Population Health: Investing in the Health of Canadians*. In this document, the Canadian Ministers of Health committed to dealing with all major influences on health, including living and working conditions, physical environment, personal health practices, individual capacity and coping skills, and health services (Townson, 1999).

In 1996, the Advisory Committee on Population Health (ACPH) issued a report entitled *The Report of the Health of Canadians* in which it stated (as cited in Townson, 1999, p. 10):

> "Current trends in many of the most powerful factors that make and keep people healthy, such as employment, adequate income and a fair distribution of wealth are cause for concern."

The report also acknowledges (see Townson, 1999, p. 22) that:

> "health is greatly affected by things in our social and economic environment such as having an adequate income, physical safety, learning opportunities and meaningful work. Friendship and other support networks in our families, workplaces and communities, and social roles such as the roles of women and men in society also have an important impact.... In fact, evidence suggests that living and working conditions are perhaps the most powerful influences on health."

This report also noted the important link between healthy working conditions and population health.

The 1990s also heralded a period of fiscal restraint where pan-Canadian public sector health care budgets were frozen or reduced. These budget reductions spanned the years 1993 to 1997 (CIHI, 2003). A shortage of money made it difficult (if not impossible) to implement the ideas espoused in the reports noted above.

The New Millennium: Solving the Crisis

In the new millennium, Canadians awoke to the fact that their health care system is in crisis. Symptoms of this crisis include run-away health care costs, long wait times and health human resource issues (e.g. labour force shortages, labour strife, unhealthy work environments). The response to this crisis has been the creation of commissions and the production of government reports. Major provincial reports on health also published in the early part of the 21st century include those offered by Clair in Quebec, Mazankowski in Alberta and Fyke in Saskatchewan (CIHI, 2003). In 2002, two major federal government commissions also published their findings (CIHI, 2003):

- The *Report of the Federal Standing Committee on Social Affairs*, Science and Technology (i.e. the Kirby Commission), and
- The *Commission on the Future of Health Care in Canada* (i.e. the Romanow Commission).

Both of these reports called for major reforms to the health care system while at the same time acknowledging how difficult this will be. The Romanow Commission, for example, argued that primary health care reform (CIHI, 2003, p. 23):

> "goes against the entrenched practices of the prevailing culture of our health care system and it sometimes runs into powerful interests and long standing privileges."

It is also relevant to note that the Romanow report identifies "the marginal nature of prevention and promotion activities" to be a major obstacle to health care reform (CIHI, 2003).

Appendix B

Perceived Health and Use of the Health Care System

1. Results Obtained for Total Sample

Perceived Health	
% Saying Excellent/Very Good	48.4
% Saying Good	34.9
% Saying Fair/Poor	16.7
X (sd)	3.44 (0.99)
Physician Visits	
% Visiting	54.1
X (sd) Visits: Users	2.87 (2.12)
X (sd) Visits: Total Sample	1.54 (2.11)
Visits to Other Health Care Professionals	
% Visiting	31.8
X (sd) Visits: Users	5.00 (3.27)
X (sd) Visits: Total Sample	1.47 (2.89)
Visits to Mental Health Professionals	
% Visiting	10.6
X (sd) Visits: Users	4.10 (2.98)
X (sd) Visits: Total Sample	0.45 (1.55)

Inpatient Treatment	
% Who Stayed Overnight	5.5
X (sd) Nights: Users	2.32 (2.28)
X (sd) Nights: Total Sample	0.13 (0.76)
Visits to Emergency Departments	
% Visiting	13.1
X (sd) Visits: Users	1.58 (1.23)
X (sd) Visits: Total Sample	0.20 (0.68)
Outpatient Treatment	
% Who Sought Outpatient Treatment	29.3
X (sd) Number Visits: Users	1.91 (1.40)
X (sd) Number Visits: Total Sample	0.52 (1.12)
Amount Spent on Prescription Drugs in 6 Months	
% Who Spent Nothing	44.0
% Who Spent $1 to $150	37.4
% Who Spent > $150	18.5
X (sd) Amount	81.82 (128.11)
% Who Said Company Paid 100% of Costs of Prescription Drugs	80.1

Note: X = mean; sd = standard deviation

2. Comparison: Gender by Job Type

	Manager/Professional		"Other"	
	Male	Female	Male	Female
Perceived Health				
Excellent/Very Good	50.6%	52.1%	44.6%	45.7%
Good	34.7%	33.2%	37.0%	35.5%
Fair/Poor	14.8%	14.6%	18.5%	18.8%
Mean	3.50%	3.52%	3.35%	3.36%

F = 51.80 (3df) α = 0.0001
Male M/P > Male O, Female O; Female M/P > Male O, Female O

Physician Visits				
% Visiting	49.5%	55.5%	50.7%	58.1%
X Visits (Users)	2.70%	2.86%	2.78%	3.03%

F = 17.6 (3df) α = 0.0001
Female M/P > Male M/P; Female O > all other groups

X Visits (Total)	1.33%	1.57%	1.39%	1.74%

F = 56.82 (3df) α = 0.0001
Female M/P > Male M/P, Male O; Female O > all other groups

Visits to Other Health Care Professionals				
% Visiting	27.5%	33.6%	27.6%	32.8%
X Visits (Users)	4.84%	5.19%	4.59%	5.11%

F = 11.0 (3df) α = 0.001;
Female M/P > Male M/P, Male O; Female O > Male O, Male M/P

X Visits (Total)	1.29%	1.67%	1.21%	1.58%

F = 35.5 (3df) α = 0.001;
Female M/P > Male M/P, Male O; Female O > Male O, Male M/P

Visits to Mental Health Professionals				
% Visiting	8.3%	12.8%	7.6%	12.0%
X Visits (Users)	4.20%	4.05%	4.25%	4.04%

F = 0.70 (3df) α = 0.56;
No two groups are significantly different at the 0.05 level

X Visits (Total)	0.33%	0.50%	0.31%	0.45%

F = 35.5 (3df) α = 0.001
Female M/P > Male M/P, Male O; Female O > Male O, Male M/P

	Manager/Professional		"Other"	
	Male	Female	Male	Female
Inpatient Treatment				
% Overnight	5.2%	5.6%	5.7%	6.6%
X Nights (Users)	2.58%	2.23%	2.57%	2.42%

F = 1.79 (3df) α = 0.17;
No two groups are significantly different at the 0.05 level

X Nights (Total)	0.12%	0.12%	0.13%	0.14%

F = 1.96 (3df) α = 0.12;
No two groups are significantly different at the 0.05 level

Visits to Emergency Departments				
% Visiting	10.9%	10.9%	14.4%	14.6%
X Visits (Users)	1.56%	1.51%	1.62%	1.62%

F = 1.76 (3df) α = 0.16;
No two groups are significantly different at the 0.05 level

X Visits (Total)	0.16%	0.19%	0.22%	0.23%

F = 11.84 (3df) α = 0.0001
Female O > Female M/P, Male M/P; Male O > Female M/P, Male M/P

Outpatient Treatment				
% Who Received	25.4%	29.9%	24.7%	31.1%
X Times (Users)	1.94%	1.85%	1.95%	1.88%

F = 2.0 (3df) α = 0.11;
No two groups are significantly different at the 0.05 level

X Times (Total)	0.47%	0.56%	0.44%	0.56%

F = 17.6 (3df) α = 0.001
Female M/P > Male M/P, Male O; Female O > Male O, Male M/P

Percent Spending Following Amounts on Prescription Drugs in Past Six Months				
Nothing	53.6%	39.1%	52.4%	36.4%
$1 to $150	29.5%	42.5%	31.6%	42.8%
> $150	16.9%	18.2%	16.0%	20.8%

Chi-square = 63|0.14 (6) α = 0.001

Note: M/P = Manager/Professional; O = "Other"

3. Comparison: Gender by Dependent Care (DC) Status

	Male		Female	
	No DC	DC	No DC	DC
Perceived Health				
Excellent/Very Good	51.4%	45.9%	50.3%	46.4%
Good	33.4%	37.1%	34.0%	35.7%
Fair/Poor	15.2%	17.0%	15.6%	17.9%
Mean	3.52%	3.40%	3.51%	3.40%

F = 17.7 (3df) α = 0.0001
Female No D > Male D, Female D; Male No D > Female D, Male D

Physician Visits				
% Visiting	49.3%	50.0%	56.2%	57.4%
X Visits (Users)	2.74%	2.73%	2.91%	3.00%

F = 12.7 (3df) α = 0.0001
Female D > Male D, Male No D; Female No D > Male D, Male No D

X Visits (Total)	1.34%	1.35%	1.62%	1.69%

F = 51.54 (3df) α = 0.0001
Female D > Male D, Male No D; Female No D > Male D, Male No D

Visits to Other Health Care Professionals				
% Visiting	26.7%	27.7%	32.7%	33.3%
X Visits (Users)	4.72%	4.72%	5.01%	5.15%

F = 10.1 (3df) α = 0.001
Female No D > Male D, Male No D; Female D > Male D, Male No D

X Visits (Total)	1.21%	1.26%	1.58%	1.62%

F = 38.1 (3df) α = 0.001
Female No D > Male D, Male No D; Female D > Male D, Male No D

Visits to Mental Health Professionals				
% Visiting	6.6%	8.9%	11.0%	13.2%
X Visits (Users)	4.26%	4.18%	4.21%	3.90%

F = 2.53 (3df) α = 0.05;
No two groups are significantly different at the 0.05 level

X Visits (Total)	0.27%	0.35%	0.43%	0.48%

F = 23.1 (3df) α = 0.001
Male D > Male No D; Female No D > Male D, Male No D; Female D > Female No D, Male D, Male No D

	Male		Female	
	No DC	DC	No DC	DC
Inpatient Treatment				
% Overnight	5.4%	5.5%	5.6%	6.6%
X Nights (Users)	2.73%	2.46%	2.32%	2.38%

F = 1.71 (3df) α = 0.17;
No two groups are significantly different at the 0.05 level

X Nights (Total)	0.13%	0.12%	0.12%	0.14%

F = 1.76 (3df) α = 0.12;
No two groups are significantly different at the 0.05 level

Visits to Emergency Departments				
% Visiting	12.1%	12.7%	13.3%	13.9%
X Visits (Users)	1.60%	1.60%	1.49%	1.65%

F = 2.96 (3df) α = 0.03;
No two groups are significantly different at the 0.05 level

X Visits (Total)	0.19%	0.21%	0.19%	0.23%

F = 3.04 (3df) α = 0.03;
No two groups are significantly different at the 0.05 level

Outpatient Treatment				
% Who Received	24.3%	25.4%	29.4%	31.5%
X Number (Users)	1.87%	1.92%	1.88%	1.93%

F = 0.82 (3df) α = 0.48;
No two groups are significantly different at the 0.05 level

X Number (Total)	0.44%	0.47%	0.53%	0.58%

F = 23.3 (3df) α = 0.001;
Female No D > Male D, Male No D; Female D > Female No D, Male D, Male No D

Percent Spending Following Amounts on Prescription Drugs in Past Six Months				
Nothing	54.1%	52.8%	37.8%	38.3%
$1 to $150	30.0%	30.6%	43.7%	40.8%
> $150	15.9%	16.7%	18.5%	20.9%

Chi-square = 671.73 (6) α = 0.001

Note: DC, D = Dependent Care

4. Comparison: Gender by Sector of Employment

	Public Sector		Private Sector		Not-for-Profit Sector	
	Male	Female	Male	Female	Male	Female
Perceived Health						
Excellent/Very Good	46.1%	45.8%	48.8%	46.8%	51.1%	52.6%
Good	36.3%	35.4%	35.8%	34.6%	34.3%	33.1%
Fair/Poor	17.6%	18.8%	15.4%	16.3%	14.6%	14.2%
Mean	3.36%	3.37%	3.50%	3.45%	3.50%	3.50%

F = 23.0 (5df) α = 0.0001
Male Priv. > Female PS, Male PS; Male NFP > Female PS, Male PS; Female NFP > Female PS, Male PS

Physician Visits						
% Visiting	51.5%	59.7%	42.5%	53.2%	49.9%	55.5%
X Visits (Users)	2.83%	3.05%	2.45%	2.81%	2.70%	2.89%

F = 15.23 (5df) α = 0.0001
Female PS > all other groups; Male Priv. < all other groups

X Visits (Total)	1.45%	1.80%	1.02%	1.47%	1.30%	1.59%

F = 56.23 (5df) α = 0.0001
Female PS > all other groups; Male Priv. < all other groups; Female NFP > Male PS, Male Priv., Male NFP; Female Priv. > Male Priv. (i.e. women greater than men within sector), Male PS > Male NFP

Visits to Other Health Care Professionals						
% Visiting	27.7%	35.0%	23.9%	30.2%	28.4%	32.3%
X Visits (Users)	4.68%	5.23%	4.34%	4.98%	4.95%	5.07%

F = 9.25 (5df) α = 0.0001
Male Priv. < all other groups; Female PS > Male PS; Female NFP > Male PS

X Visits (Total)	1.25%	1.75%	0.99%	1.42%	1.35%	1.54%

F = 34.15 (5df) α = 0.0001
Male Priv. < all other groups; Female PS > Male PS, Male Priv., Male NFP; Female Priv. > Male PS, Male Priv., Male NFP; Female NFP > Male PS, Male Priv., Male NFP (i.e. women greater than men within sector)

Visits to Mental Health Professionals						
% Visiting	8.4%	13.1%	6.4%	11.0%	8.1%	11.7%
X Visits (Users)	4.28%	4.13%	4.01%	3.92%	4.13%	3.94%

F = 1.01 (5df) α = 0.41;
No two groups are significantly different at the 0.05 level

X Visits (Total)	0.34%	0.51%	0.25%	0.41%	0.32%	0.43%

F = 20.08 (5df) α = 0.0001
Male Priv. < all other groups; Female PS > all other groups; Female PS > Male PS, Male Priv., Male NFP; Female Priv. > Male PS, Male Priv., Male NFP; Female NFP > Male PS, Male Priv., Male NFP (i.e. women greater than men within sector)

	Public Sector		Private Sector		Not-for-Profit Sector	
	Male	Female	Male	Female	Male	Female
Inpatient Treatment						
% Overnight	5.4%	6.4%	4.9%	6.4%	5.8%	5.6%
X Nights (Users)	2.50%	2.33%	2.56%	2.16%	2.66%	2.50%

F = 1.31 (5df) α = 0.26;
No two groups are significantly different at the 0.05 level

X Nights (Total)	0.12%	0.13%	0.11%	0.12%	0.14%	0.13%

F = 0.97 (5df) α = 0.44;
No two groups are significantly different at the 0.05 level

Visits to Emergency Departments						
% Visiting	12.1%	13.8%	12.6%	12.5%	13.0%	14.1%
X Visits (Users)	1.64%	1.60%	1.56%	1.60%	1.60%	1.54%

F = 0.68 (5df) α = 0.69;
No two groups are significantly different at the 0.05 level

X Visits (Total)	0.19%	0.21%	0.18%	0.19%	0.20%	0.21%

F = 0.93 (5df) α = 0.46;
No two groups are significantly different at the 0.05 level

Outpatient Treatment						
% Who Received	25.4%	31.8%	21.1%	27.9%	26.4%	30.5%
X number (Users)	1.92%	1.95%	1.74%	1.88%	1.96%	1.88%

F = 1.87 (5df) α = 0.10;
No two groups are significantly different at the 0.05 level

X number (Total)	0.47%	0.59%	0.35%	0.49%	0.49%	0.55%

F = 23.0 (5df) α = 0.0001
Male Priv. < all other groups; Female PS > all other groups; Female Priv. < Female PS, Female NFP
Note: No gender difference in NFP sector

Percent Spending Following Amounts on Prescription Drugs in Past Six Months						
Nothing	49.7%	35.1%	54.6%	36.9%	58.0%	42.1%
$1 to $150	31.2%	41.4%	33.4%	45.7%	27.3%	41.1%
> $150	19.1%	23.4%	12.0%	17.4%	14.7%	16.8%

Chi-square = 887.48 (6) α = 0.001

Note: PS = public sector; Priv. = private sector; NFP = not for profit sector

Appendix C

Impact of Work–Life Conflict on Health Outcomes

Construct	Role Overload		Work to Family Interference		Family to Work Interference		Caregiver Strain	
	High	Low	High	Low	High	Low	High	Low
% Who say health is very good/excellent	41.2	67.8	38.3	59.2	37.1	52.8	35.3	47.2
% Who say health is fair/poor	21.7	7.4	24.7	10.5	27.0	14.1	28.4	17.1
% Who have not seen physician in past six months	42.6	56.2	42.2	50.0	42.2	48.1	38.7	47.6
% Seeing physician 3 or more times in past six months	27.9	15.6	29.2	18.7	28.9	21.3	33.5	23.2
% Who have spent time in hospital in past six months	6.6	4.4	7.0	4.9	6.6	5.2	8.2	5.6
% Who have visited emergency in past six months	14.1	9.9	14.9	9.9	15.6	11.8	18.1	11.9
% Who have not sought care from another health care professional in past six months	67.9	77.2	66.7	73.8	67.6	71.6	68.3	70.0
% Who have sought care from another health care professional 4 or more times in past six months	19.4	12.4	18.8	14.7	17.8	16.2	18.1	16.9
% Who have sought care from mental health professional in past six months	13.1	5.1	13.7	8.1	16.8	8.9	15.2	10.2
% Who have not had outpatient visit in past six months	70.4	78.5	69.1	75.6	70.9	73.8	64.5	71.6
% Who have had at least 3 outpatient visits in past six months	7.6	3.2	7.5	4.4	7.6	4.9	10.1	5.6
% Who have spent nothing on prescription drugs in past six months	39.8	50.5	41.4	45.5	40.9	44.7	32.2	43.1
% Who have spent $150 or more on prescription drugs in past six months	25.9	14.0	22.1	16.8	20.5	18.1	28.4	18.1
Average amount spent on prescription medicine in past six months	$93.36	$69.17	$94.17	$79.15	$96.1	$82.2	$118.17	$86.14

Note: All differences are significant at 0.0001

Appendix D

Relative Risk of Work–Life Conflict

	Relative Risk Associated With			
	Role Overload	Work to Family Interference	Family to Work Interference	Caregiver Strain
% Who say health is very good/excellent*	1.6	1.5	1.4	1.3
% Who say health is fair/poor	2.9	2.4	1.9	1.7
% Who have not seen physician in past six months*	1.3	–	–	–
% Seeing physician 3 or more times in past six months	1.8	1.6	1.4	1.4
% Who have spent time in hospital in past six months	1.5	1.4	1.3	1.5
% Who have visited emergency in past six months	1.4	1.5	1.3	1.5
% Who have sought care from another health care professional 4 or more times in past six months	1.6	1.3	–	–
% Who have sought care from mental health professional in past six months	2.6	1.7	1.9	1.5
% Who have had at least 3 outpatient visits in past six months	2.4	1.7	1.6	1.8
% Who have spent nothing on prescription drugs in past six months*	1.3	–	–	1.3
% Who have spent $150 or more on prescription drugs in past six months	1.9	1.3	–	1.6

Relative risk was calculated in two ways:

- For those constructs marked with an *, risk was calculated by dividing the mean score achieved by employees with low work–life conflict by the mean score achieved by those with high work–life conflict
- For all other constructs, risk was calculated by dividing the mean score achieved by employees with high work–life conflict by the mean score achieved by those with low work–life conflict

Note: Only relative risks of 1.3 or greater are shown

Appendix E

Calculating the Costs to the Health Care System of Work–Life Conflict

The first step in obtaining data for an economic estimate of work–life conflict is to select the stressor and the specific consequences of interest from the wide range of potential consequences that exist. In the case of work–life conflict, we defined the stressor as the perception of role overload, work to family interference, family to work interference and caregiver strain.

This leaves the question of which consequences to explore, given the wide range of health care outcomes available from this research. This task is made somewhat easier by the requirement that the economic and health cost data be available on *a national level from secondary sources*. As expressed by Cooper et al. (1996), "The problem is...not the lack of economic calculation methods, but the lack of factual material on which to base calculations" (p. 78). After much searching,[35] we could find reliable national data only on the following three health care outcomes: physician visits, inpatient hospital stays and emergency room visits.

The following are the basic components of the socio-economic assessment model (Levi & Lunde-Jensen, 1996), and the Canadian data sources used to meet these needs:

Health care system data and basic economic indicators are needed from which one can calculate the total use of this component of the health care system and to assign a value to the average cost per use (in our case, physician visits, inpatient hospital stays and emergency room visits). Information on the health care system data used in this report is included in Boxes E1 (Physician visits), E2 (Inpatient hospital stays) and E3 (Emergency visits).

Box E1

Data Used in Calculations for Physician Visits

Source: Canadian Institute for Health Information (2001). National Physician Database, National Grouping System Categories Report, Canada, 1996-97 to 1998-99 (Table 21-5). Ottawa: CIHI.

The following data are needed to perform these calculations:

- the total number of physician visits in Canada for a specific year for the population aged 18 to 65, and
- the average cost per physician visit in Canada in same year.

The following data were obtained from CIHI (2001):

- Total number of physician visits in 1998-99 was 191,945,348
- Average cost for physician visits and consultations 1998-99, Canada = $38.31

Specific limitations of the cost data include the fact that it was calculated using all office visits to the physician, including maternity-related visits and regular check-ups. The data are further limited by the fact that they are based on 1998-99 (the most recent year for which national data were available). Costs have likely increased in the past several years and as such the figures contained in this report underestimate the actual situation. The data for number of visits are further limited by the fact that only data for all patients were available (not just employed patients). Older people typically make higher use of the health care system, while younger Canadians enjoy better health. We are not sure, therefore, what impact this limitation will have on our cost estimates.

35 We would like to acknowledge the assistance of Health Canada and CIHI who spent a lot of time and effort trying to help us track down national data.

Box E2

Data Used in Calculations for Inpatient Hospital Stays

Source: Personal communication, Canadian Institute for Health Information, Canadian Management Information Systems Database, October 2002.

The following data are needed to perform these calculations:

- the total number of days spent in hospital in Canada for a specific year for the population aged 18 to 65; and
- the average cost per night in hospital in Canada in the same year.

The following data were obtained from CIHI (2002):

- The number of patient days spent in hospital in Canada for 1999-2000 = 34,312,892
- Average cost/day in 1999-2000 (Includes hospitals of all sizes, including teaching hospitals and pediatric) = $660

One of the major limitations of these data is that they include patients of all ages, except newborns at time of delivery. It was not possible to obtain data which were restricted by the age of the patient. Second, the data are several years out of date. It is likely that hospital costs have changed since 1999-2000.

Box E3

Data Used in Calculations for Emergency Room Visits

Source: Personal communication, Canadian Institute for Health Information, Canadian Discharge Abstract Database, March 2003.

The following data are needed to perform these calculations:

- the total number of visits to emergency units in Canada for a specific year for the population aged 18 to 65; and
- the average cost per visit to an emergency unit in Canada in the same year.

The following data were obtained from CIHI (2003):

- Total visits estimated to be 13,378,011 for 2000-01
- Cost per visit estimated to be $87.39 for 2000-01

The reader should be aware of the possible limitations associated with these data. The primary limitation relates to the fact that this is the first year that these data have been produced by the CIHI. Because the methodology is under development, the numbers are preliminary and subject to revision and development. This caution is consistent with the fact that the ratio of expenses to visits shows a wide variability by province. A second limitation is that the population for which the data were collected is aged 15 to 64. It is possible that emergency room visits may differ with patient age.

An estimate of the proportion of the use of this component of the health care system related to work–life conflict. The data set from the 2001 "National Study on Balancing Work, Family and Lifestyle" was used to estimate prevalence, relative risk and the etiologic fraction. The questions to be answered from this dataset are:

1. What proportion of workers are exposed to the risk factor (in our case, work–life conflict)? This is the *prevalence* question.

2. What proportion of visits to the physician, inpatient hospital stays and emergency room visits can be associated with the risk factor? This answers the question of *relative risk*.

3. With data on both the exposed population and their excess risk, how much of the total health care system use would *not* have occurred had the risk factor been absent? This expression is referred to as the *etiologic fraction*.

Tables E1 through E3 provide the data used to answer these questions with respect to physician visits, inpatient hospital stays and emergency room visits.

Table E1: Costs of Work–Life Conflict: Physician Visits

Total Sample	Role Overload		Work to Family Interference		Family to Work Interference		Caregiver Strain	
	High	Low	High	Low	High	Low	Moderate/High[36]	Low
Prevalence (P)	58.0	12.3	28.0	35.2	9.6	58.8	25.9	74.1
# Visits to Physician	1.741	1.105	1.817	1.354	1.888	1.437	2.022	1.529
Relative Risk (RR)	1.58		1.34		1.31		1.32	
Etiologic Fraction	25.0%		8.7%		2.9%		7.7%	
Total Visits	192 million		192 million		192 million		192 million	
Excess Visits Due to:	48.0 million		16.8 million		5.6 million		14.8 million	
Costs per Visit	$38.31		$38.31		$38.31		$38.31	
Directs Costs of Excess Visits Due to:	$1.84 billion		$643 million		$215 million		$567 million	

Table E2: Costs of Work–Life Conflict: Inpatient Hospital Stays

Total Sample	Role Overload		Work to Family Interference		Family to Work Interference		Caregiver Strain	
	High	Low	High	Low	High	Low	Moderate/High[37]	Low
Prevalence (P)	58.0	12.3	28.0	35.2	9.6	58.8	25.9	74.1
# Days in Hospital	0.139	0.103	0.157	0.117	0.136	0.122	0.223	0.120
Relative Risk (RR)	1.35		1.34		1.11		1.86	
Etiologic Fraction	16.9%		8.7%		1.1%		18.2%	
Total Days	34.3 million		34.3 million		34.3 million		34.3 million	
Excess Days Due to:	5.78 million		3.00 million		374,000		6.24 million	
Costs per Day	$660		$660		$660		$660	
Direct Costs of Excess Hospital Stays Due to:	$3.82 billion		$1.98 billion		$247 million		$4.12 billion	

36 In this analysis, caregiver strain was broken down into two main groups: those who reported such strain once a week or more and those who experienced it monthly or less. With 9.0% of the population reporting very high levels of caregiver strain (i.e. report strain daily or several times a week), the direct cost of physician visits is estimated to be $207 million per year.

37 In this analysis, caregiver strain was broken down into two main groups: those who reported such strain once a week or more and those who experienced it monthly or less. With 9.0% of the population reporting very high levels of caregiver strain (i.e. report strain daily or several times a week), the direct cost of inpatient hospital stays works out to $1.62 billion.

Table E3: Costs of Work–Life Conflict: Emergency Room Visits

Total Sample	Role Overload		Work to Family Interference		Family to Work Interference		Caregiver Strain	
	High	Low	High	Low	High	Low	Moderate/High[38]	Low
Prevalence (P)	58	12.3	28	35.2	9.6	58.8	25.9	74.1
# Emergency Room Visits	0.229	0.152	0.254	0.169	0.274	0.184	0.328	0.201
Relative Risk (RR)	1.51		1.5		1.49		1.63	
Etiologic Fraction	22.7%		12.3%		4.5%		14.1%	
Total Visits	13.4 million		13.4 million		13.4 million		13.4 million	
Excess Visits Due to:	3.04 million		1.65 million		600 000		1.88 million	
Costs per Visit	$87.39		$87.39		$87.39		$87.39	
Direct Costs of Excess Emergency Visits due to:	$265 million		$144 million		$52.4 million		$164 million	

Question 1 (prevalence) was answered by calculating the proportion of the sample who reported high work–life conflict (i.e. operationalized as high role overload, high work to family interference, high family to work interference, high caregiver strain).

Question 2 (relative risk - RR) was obtained as follows:

- **RR: Visits to physician** was obtained by calculating the mean number of visits for those with high levels of work–life conflict and dividing this number by the number of visits for a control group of individuals with low levels of work–life conflict. Relative risk was then obtained to determine the excess number of visits associated with the risk factor (in this case, role overload, work to family interference, family to work interference and caregiver strain).
- **RR: Inpatient hospital stays** was obtained by calculating the mean number of inpatient hospital stays for those with high levels of work–life conflict and dividing this number by the number of stays for a control group of individuals with low levels of work–life conflict. Relative risk was then obtained to determine the excess number of stays associated with the risk factor.
- **RR: Visits to emergency room** was obtained by calculating the mean number of visits for those with high levels of work–life conflict and dividing this number of visits by the number of visits for a control group of individuals with low levels of work–life conflict. Relative risk was then obtained to determine the excess number of visits associated with the risk factor.

Once the population at risk is quantified, and their excess risk identified, we can calculate how much of the total use of the health care system would not have occurred had the risk factor not been present in the population (Question 3: the etiologic fraction). This is calculated from prevalence (P) and relative risk (RR) with the formula:

Etiologic fraction = (RR - 1) * P / ((RR - 1) * P + 1)

So, for example, 58.0% of the sample report high role overload and 12.3% report low role overload. Employees with high role overload made an average of 1.74 visits to a physician in a six-month period compared to only 1.11 visits for those with low role overload. This yields a RR of 1.58 (i.e. visits to physician among employees with high role overload was 1.58 times the number of visits for workers with low role overload).

Continuing the calculations, if the risk of the exposed group is 1.58 times the risk of the control group, and the prevalence is 58%, then the formula for the etiologic fraction gives (1.58 - 1) * 0.58 / [(1.58 - 1) * 0.58 + 1] = 0.25. Excess visits to physicians among employees who worked under conditions of high work–life conflict, therefore, can be

38 In this analysis, caregiver strain was broken down into two main groups: those who reported such strain once a week or more and those who experienced it monthly or less. With 9.0% of the population reporting very high levels of caregiver strain (i.e. report strain daily or several times a week), the direct cost of emergency visits is estimated at $62.9 million per year.

quantified as 25%. This works out to an excess of 48 million physician visits per year that can be attributed to high levels of role overload (i.e. 25% of 192 million). To estimate the costs associated with this excess number of visits, we use the national average cost of a visit to a physician. For 1999 (the most recent year available), this worked out to a cost of $38.31 per visit. We then multiplied the excess number of visits by the cost per visit to arrive at an estimated cost per year of excess visits to a physician that can be attributed to high levels of role overload: $1.84 billion per year. Similar calculations were done to calculate increased costs due to work to family interference, family to work interference and caregiver strain (see Table E1) and increased costs due to each form of work–life conflict for inpatient hospital stays (Table E2) and emergency room visits (Table E3).

Limitations of the Estimates

To our knowledge, these estimates represent the first attempt to assign a dollar value to the health care costs of work–life conflict at the national level and, as such, are not without their limitations. First, we must again stress that these estimates are conservative and likely represent only a fraction of the costs that could be attributable to work–life conflict. For the health care sector, we could get reliable data only on three aspects of use of the health care system: physician visits, inpatient hospital stays and emergency room visits. Our estimates, therefore, cannot gauge the contribution of work–life conflict to public expenditures for services such as diagnostic procedures, visits to mental health professionals, and the governments' share of the costs of drugs used to treat stress-related illnesses. Nor can we assign costs to private companies and individuals incurred from employees' use of other health care professionals and prescription drug use (e.g. employee assistance program costs, the cost of chiropractors, physiotherapists, prescription drugs which are paid for by the employer as part of the employees' benefit plan or paid for by individual employees without such benefits).

Our estimates are also limited by the sample we used as a basis for calculating our multipliers. The employees in our sample may not be representative of employees across Canada as they work for companies employing more than 500 people. Levi and Lunde-Jensen (1996), however, argue that generalizability can be enhanced by comparing estimates to those obtained in other samples. In this regard, we note that our etiologic fractions (i.e. the proportion of excess physician visits for example associated with work–life conflict) are in line with numbers obtained in the European Community studies (Levi & Lunde-Jensen, 1996).

Finally, our estimates are also limited by our national-level data sources.[39] Suffice it to say that finding appropriate health care information was a considerable challenge. Although both Statistics Canada and CIHI provide excellent health data, it was nearly impossible to compare "oranges and oranges." Large interprovincial differences in payment schedules and classification categories made the costing of physician services and hospital visits extremely difficult. Many data are still not collected at the national level and were available for specific provinces only. The high degree of variability of these data between provinces (e.g. the outpatient diagnostic data) meant that we were not comfortable extrapolating these data to the national level. Another difficulty can be attributed to the fact that how the data are collected, grouped and captured has changed dramatically over the past several years as Statistics Canada and CIHI have tried to improve the data collection process. This means that it is difficult to do comparisons over time. This caution is particularly important with respect to comparing the costs to the health care system of increased physician visits reported in our 1999 study (Duxbury et al., 1999) to the calculations contained in this report.[40]

CIHI (2002) also discusses the difficulties of obtaining national health care data. It attributes some of these difficulties to the fact that setting up electronic health records is complex, and appropriate privacy safeguards have yet to be established. Many jurisdictions, in fact, have passed legislation protecting the privacy of health information. Hopefully, this situation will be rectified in the near future as the Government of Canada has committed $500 million to the Canada Health Infoway Inc (CHII) to establish and accelerate the development of modern health information systems (CIHI, 2002).

Overall, we believe our estimates to be fair, given the data at hand. We are further reassured by the fact that these figures represent a lower end estimate in that we examined only a few of the possible costs for individuals who reported high levels of conflict (individuals with moderate levels of conflict also likely contribute to increased costs). Should better data become available, the multipliers obtained in this study should allow recalculation with relative ease.

39 The specific limitations associated with each set of data are given in the text boxes in this appendix.

40 1999 calculations based on visits made by Canadians aged 15 to 64 years; 2003 calculations based on visits made by all Canadians, regardless of age.